



**FINNISH FOOD
AUTHORITY**
Ruokavirasto • Livsmedelsverket

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Food Safety in Finland 2018



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Abstract

This report presents for the year 2018 the 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 EU Control Regulation (EC) No. 882/2004 with respect to food safety where the annual report describes the results of control in the various sectors of the food supply chain as a whole.

The results of regulatory control and research in 2018 demonstrate a good status of food safety in Finland. Domestically produced food does not contain chemical substances in levels that would be dangerous to the consumer. Foodstuffs tested contain food-poisoning causing bacteria in very low concentrations. The number of food-borne epidemics as well as the number of people affected increased notably from the previous year. The reason for this increase was mainly due to illnesses caused by noroviruses. The number of food frauds is increasing and fraudulent activities are also found in Finland. The number of food withdrawals is still increasing.

As a rule, food sector companies operating in Finland meet food safety requirements excellently or very well. Severe shortcomings occur in very low numbers.

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Tiivistelmä

Tässä raportissa kerrotaan elintarviketurvallisuuteen liittyvän viranomaisvalvonnan, elintarvikkeiden ja rehujen virallisten valvonta- ja seurantaohjelmien, tutkimusten ja riskinarviointien tuloksista vuodelta 2018, sekä arvioidaan niiden perusteella Suomen elintarviketurvallisuustilannetta ja viranomaistoiminnan tulevaisuuden tarpeita. Raportti syventää elintarviketurvallisuuden osalta EU:n valvonta-asetuksen (EY) No 882/2004 edellyttämää vuosiraporttia, jossa kuvataan valvonnan tulokset koko elintarvikeketjun eri sektoreilla.

Viranomaisvalvonnan ja -tutkimusten tulokset vuodelta 2018 osoittavat, että elintarviketurvallisuus on Suomessa hyvällä tasolla. Kotimaassa tuotetut tuotteet eivät sisällä kuluttajalle vaarallisia määriä kemiallisia aineita. Ruokamyrkytyksiä aiheuttavia bakteereita esiintyy hyvin vähän tutkituissa elintarvikkeissa. Elintarvikeväliteisten epidemioiden määrä kasvoi merkittävästi edellisestä vuodesta samoin kuin epidemioissa sairastuneiden määrä. Syynä muutokseen olivat pääasiassa noroviruksen aiheuttamat sairastumiset. Ruokapetosten määrä kasvaa ja myös Suomessa havaitaan petoksellista toimintaa. Elintarvikkeiden takaisinvetojen määrä on edelleen kasvussa.

Kotimaassa toimivat elintarvikealan yritykset täyttävät elintarviketurvallisuusvaatimukset pääosin oivallisesti tai hyvin. Vakavia puutteita esiintyy hyvin vähän.

Beskrivning

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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 2018 och utgående från dem utvärderas livsmedelssäkerhetsläget och de framtida behoven inom myndighetsverksamheten i Finland. Rapporten fördjupar den årliga rapport, som EU:s kontrollförordning (EG) nr 882/2004 förutsätter för livsmedelssäkerhetens del. I rapporten beskrivs resultaten av kontrollen i olika sektorer av livsmedelskedjan som helhet.

Resultaten av myndighetstillsynen och -undersökningarna år 2018 visar att livsmedelssäkerheten i Finland befinner sig på en hög nivå. Produkterna som producerats i Finland innehåller inte kemiska ämnen i mängder som är skadliga för konsumenten. Bakterier som orsakar matförgiftningar förekommer i mycket små mängder i de undersökta livsmedlen. Mängden livsmedelsburna epidemier ökade betydligt från föregående år, likaså ökade antalet personer som insjuknat i epidemier. Orsaken till förändringen är främst insjuknanden förorsakade av norovirus. Mängden matbedrägerier ökar och också i Finland påträffas ohederlig verksamhet. Antalet återkallelser av livsmedel stiger fortfarande.

Livsmedelsföretagen som verkar i Finland uppfyller till största delen livsmedelssäkerhetskraven utmärkt eller bra. Allvarliga brister förekommer ytterst sällan.

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Introduction

This report presents for the year 2018 the results of official control related to food safety, official control and monitoring programmes on food and feed, as well as research and risk assessments. The report also assesses, based on those results, the status of food safety and the future needs of regulatory activities in Finland. The report extends the annual report referred to in the EU Control Regulation (EC) No. 882/2004 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 for 2015, 2016 and 2017 were published in similar Food Safety in Finland reports. Results for earlier years can also be found on the Finnish Food Authority's websites (<https://www.ruokavirasto.fi/> and <https://www.ruokavirasto.fi/en/themes/zoonosis-centre/>).

Food business operators are responsible for the safety of their products, providing sufficient and correct information regarding them, and compliance in their operations. To ensure this, companies carry out their own check control and sampling activities. The results of own check controls are not included in this report.

Summary

The results of the official control and research conducted by authorities for the year 2018 demonstrate that food safety is at a good level in Finland. Products produced domestically do not contain chemical substances in levels dangerous to consumers. Very small amounts of bacteria causing food poisoning were found in the analysed food products. The number of foodborne outbreaks increased significantly in comparison to the previous year, and the number of people affected was almost four times as high as in the previous year. The increase was due to norovirus that spreads easily with infected kitchen workers and can affect a large number of people.

In order to maintain the good level of food safety, the situation must be monitored continuously and strict bio safety measures are required both in primary production and the industry. The good situation regarding salmonella in Finland faces challenges from both the significantly increased number of salmonella cases in imported feed and the reduced possibilities of eradicating salmonella from feed due to the prohibition of the use of formaldehyde. The occurrence of salmonella in primary production has also increased, the source of which has often been people or the environment, such as wild birds. Listeria has caused several serious outbreaks both in Finland and abroad, some of which have resulted in deaths. In Finland, the listeria outbreaks typically affect a small number of people. However, outbreaks seem to occur more frequently than before. Listeria can occur in any food product. In Finland, it has been detected in both imported foods and domestic produce. Meat and fish establishments in particular should invest in the prevention of listeria by ensuring a thorough cleaning of their production facilities and equipment.

The number of food frauds is increasing abroad, and fraudulent actions are detected in Finland as well. Typical items for fraudulent actions in Finland include indications of origin, date markings and contents that do not correspond to that indicated on the package. Organic production is gaining in popularity. The traceability of food and its raw materials is essential both in investigating frauds and in ensuring the authenticity of organic food. The methods available for investigating the origin, composition and authenticity of organic foods in Finland now also include laboratory analytics (developed by the Finnish Food Authority). In addition to frauds, other types of criminal activities are detected in the food chain. The

criminal activities may consist of the professional pursuit of financial gain and it may have implications that reach far outside of food-related activities.

The number of food recalls is increasing. The recalls show that both official control and own check control in companies are effective and done in a responsible manner.

The results of food control activities are published in operator-specific Oiva reports. In 2018, over 25,000 Oiva reports were published. According to the Oiva results, food business operators complied with the regulatory requirements well (87% on average, A and B results) in all sectors of the industry. Only 0.6% of the companies had serious shortcomings (D result) in their compliance with requirements that concern food products.

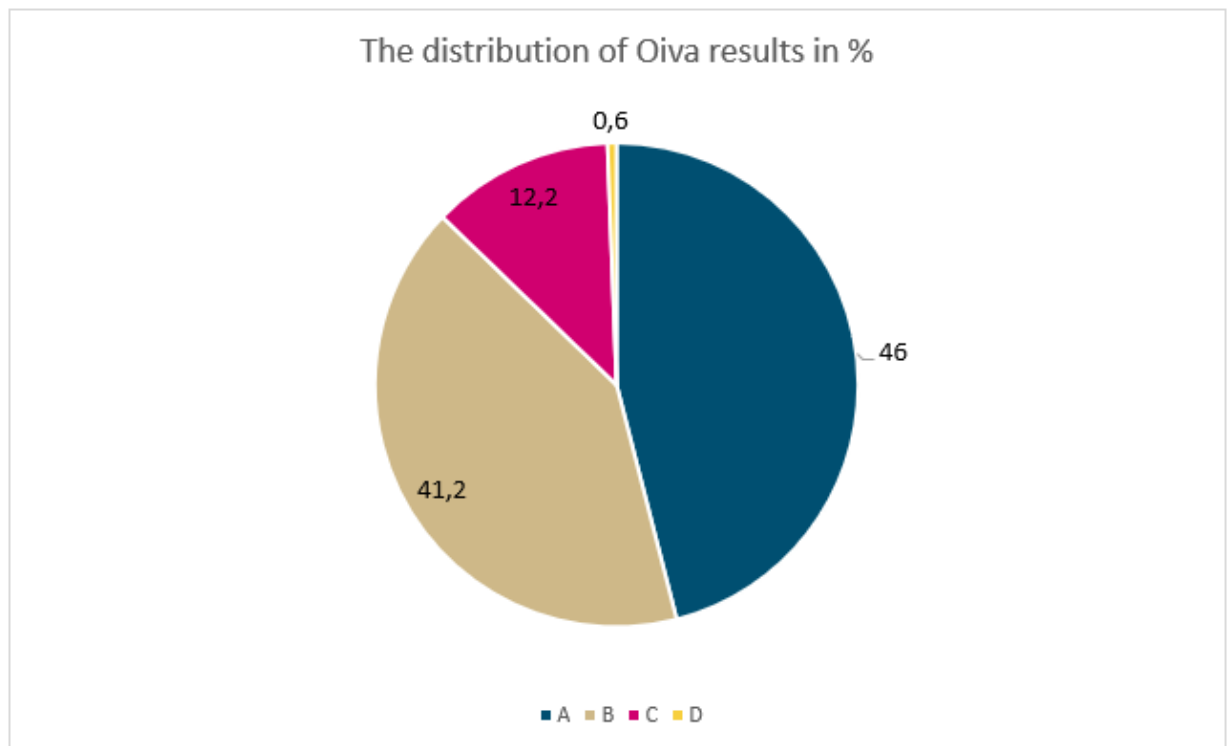


Figure 1. The distribution of Oiva results in 2018

The publishing of control data has further improved the uniformity of the control procedures and the responsibility of the operators. The Oiva system has also increased the efficiency of real-time data collection and the use of control data in planning and developing the operations. Over the coming years, food control will focus on rectifying the most common shortcomings detected in the Oiva results. The most common shortcomings in food business operations relate to basic issues such as hygiene, maintenance and cleaning, suitability of facilities and equipment to the activities in question, temperature control and own check controls.

The control activities planned by the food control authorities were mainly achieved. In some cases, the targets were not met, mainly due to the lack of resources. Special situations (such as foodborne outbreaks and recalls) that have a direct impact on food safety were handled well.

Future challenges within official activities concern the international nature of the production and sale of raw materials for food products, the networking of and chains built by the operators in the sector, multi-channel sales and marketing, new forms of production, technological advances, the differentiating and diversifying consumer needs, the effects of urbanisation on the consumption and production of food products, the effects of the ageing of the population, risk tolerance, circular economy and climate change. The control of food frauds, other criminal activities, and distance selling pose new kinds of challenges for official control. In the case of retail and restaurant chains, the control systems must be further developed to take into account the division of the responsibility for compliance of the operation among several operators in the chain. Logistics nodes, such as warehouses, must also be considered more efficiently. The improvement of the risk-based approach and harmonisation of local control activities, as well as the overall efficiency and digitalisation of official activities, remain among the goals for the near future.

For the competitiveness of Finland, the promotion of food product exports is an important focus area in official activities. The export of food products outside of the EU requires co-operation with the authorities of the destination country as it may be difficult or even impossible to receive export licences without any co-operation between the authorities. The role of authorities in promoting exports continues increasing as the requirements that the target countries set to exporting countries, export companies and exported products grow stricter. The monetary value of the Finnish food exports fell from EUR 1.7 billion in the previous year to around EUR 1.55 billion. However, the export volumes remained at the same level as in 2017.

1 THE SYSTEM OF AUTHORITIES RESPONSIBLE FOR FOOD SAFETY

The human resources for official control in food safety related tasks in 2014–2018 are presented in Table 1. At the beginning of 2019, the Finnish Food Authority took up the tasks of a central authority for food safety control and the tasks that Finnish Food Safety Authority, Evira, previously performed.

Table 1. Food control personnel in full-time equivalents (FTE)

Authority	2018	2017	2016	2015	2014
Evira	338	338	324*	321	314
ELY	26	25,4	24.3*	3,6	2,8
Regional State Administrative Agencies	19	23,8	25.5**	13,2	17
Municipalities	260	257	230,4	263,5	276,4
Customs	30	30**	80	82	84
Valvira	1,3	1,6	1,1	1,2	1,2
The Finnish Defence Forces	2	2,6	2,2	2,3	2,2
Åland (estimate)	5,4	5,4	5,4	5,4	5,4
Others, incl. authorised inspectors	14,8	14,3	14,3	18,9	18,9
Total	697	698	707	711	723

* Organic control is included from 2016 onwards

** Basis of calculation has changed

In total, 697 full-time equivalents (FTE) were invested in food, feed and organic control. The number of municipal control units was 62. The figures exclude reindeer meat controls conducted by municipal veterinarians under the Regional State Administrative Agency for Lapland, and the work hours of the fee-based official veterinarians working for Evira. The figures also exclude the work invested in testing official samples in local laboratories.

In order to enhance the prevention of food frauds, food control authorities, fiscal police forces, prosecutors, tax officials and financial investigators of Customs work in closer collaboration than before. In addition, the Grey Economy Information Unit of the Finnish tax authority coordinates the collaboration of 24 officials to combat the grey economy and financial crime. As a result of this collaboration, a website was published that gives citizens and political decision-makers up-to-date information on the grey economy and financial crime in Finland.

2 GENERAL INFORMATION REGARDING FOOD SAFETY

2.1 Companies in the food sector

Figure 2 describes the number of companies in the food product and food contact material sectors in 2018.

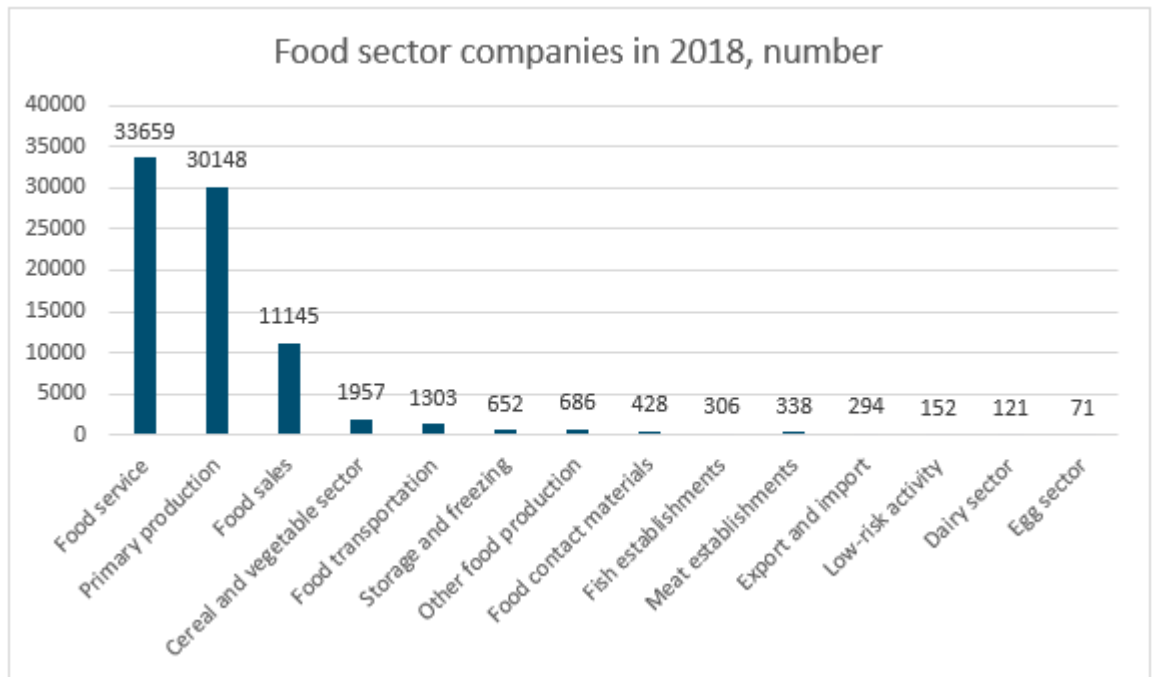


Figure 2. The number of food product and food contact material companies in the official systems in 2018

2.2 The Oiva results of food control

Planned food control is implemented by using the Oiva system that also informs consumers of the food control results of companies in the form of the Oiva report. The results of retail shops and serving establishments have been published since 2013 and those of the food industry since the beginning of 2016.

Table 2. The Oiva control visits in 2018

Activity category	Number of registered control sites	Inspections, number	Sites inspected, number	Coverage of inspections, %	Percentage of inspected Oiva sites, %	Oiva A, %	Oiva B, %	Oiva C, %	Oiva D, %	Percentage of inspections
Food transportation	1303	180	172	13%	42	88,9	8,6	2,5	0	0,7
Food sales	11145	4699	3813	34%	64	47,3	38,0	13,2	1,5	18,5
Food service	33659	17189	14682	44%	83	45,3	42,0	12,3	0,4	67,6
Food storage and freezing	652	261	177	27%	52	59,8	26,8	11,2	2,2	1,0
Food production, excl. dairy, meat, fish, egg, cereal/vegetable	585	280	217	37%	53	59,8	29,5	9,8	0,9	1,1
Fish sector	306	561	225	74%	83	38,9	47,7	12,3	1,2	2,2
Meat sector	338	777	221	65%	88	35,6	46,8	16,1	1,5	3,1
Dairy sector	121	243	95	79%	85	62,8	31,0	5,8	0,4	1,0
Egg sector	71	66	49	69%	78	65,1	31,7	1,6	1,6	0,3
Export and import	294	100	82	28%	25	56,6	22,4	20,0	1,2	0,4
Cereal and vegetable sector	1957	922	754	39%	59	40,5	46,9	12,0	0,5	3,6
Low-risk activity in food premises	152	32	28	18%	35	47,7	52,6	0	0	0,1
TOTAL	51011	25414	20611	40%	77	45,9	41,1	12,4	0,6	

Taking into account follow-up inspections, about 25,000 Oiva controls were conducted in food business operators, 86% of which were conducted in serving establishments and in retail sales.

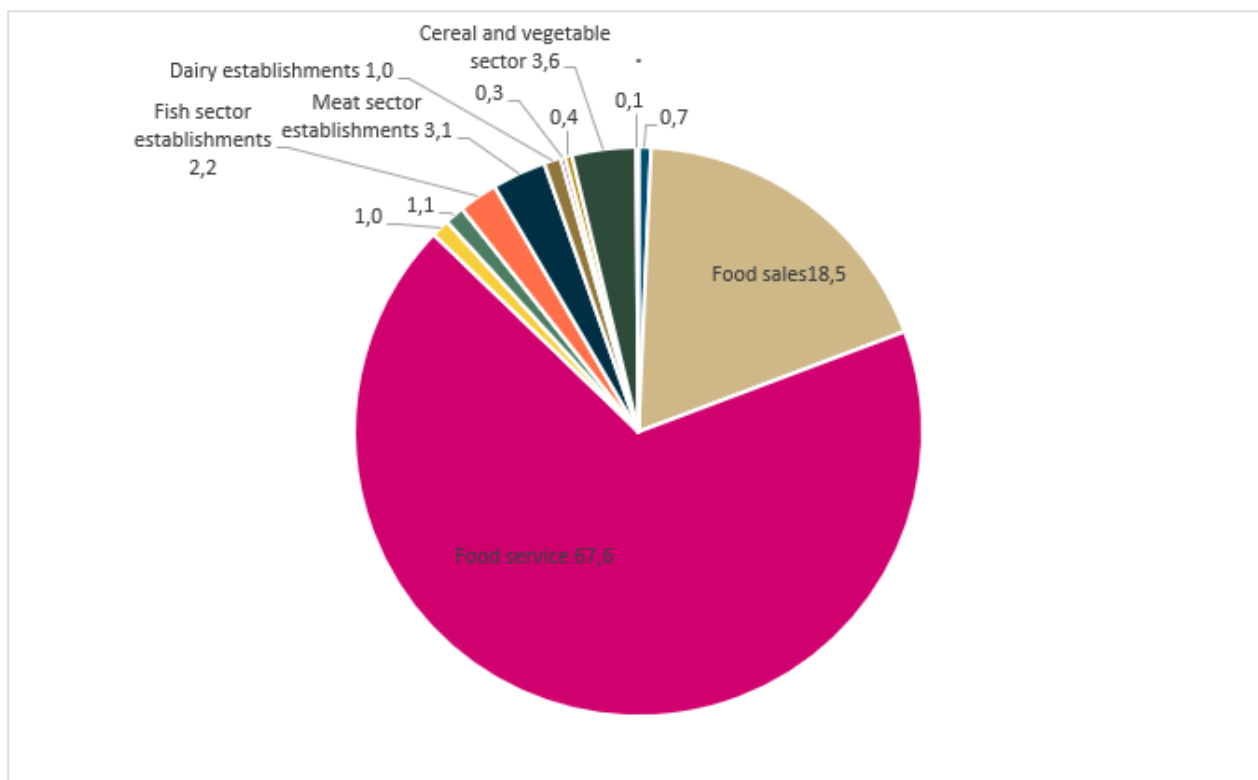


Figure 3. Percentage of controls per type of company

As of the end of 2018, 64% of retail shops, 83% of serving establishments and 71% of establishments have been inspected according to the Oiva system since their inclusion in the Oiva system. 85% of retail shops and 87% of serving establishments were rated excellent or good. Some of the sites were not inspected because their business was temporarily suspended. 86% of establishments were rated excellent or good.

Figure 3 shows the division of the inspections between different types of companies. Nearly 70% of all inspections according to the Oiva system are carried out in serving establishments, which is not surprising, considering the large proportion of serving establishments among control sites.

2.3 Hygiene proficiency

Food business operators must make sure that their employees are sufficiently proficient in food hygiene, and in certain more demanding tasks within the food industry, legislation requires that they demonstrate their food hygiene competence. The proficiency certificate, "Hygiene Passport," to verify hygiene proficiency is required of all personnel who work in the food sector and handle unpacked, perishable foodstuffs. The Finnish Food Authority, and previously Evira, approves proficiency examiners according to applications.

There are currently around 2,100 approved hygiene proficiency examiners. In 2018, no new examiners were approved.

The hygiene proficiency examiners organised a total of 10,885 examinations around Finland in 2018. As of the end of 2018, a total of 197,920 proficiency tests have been organised since the hygiene passport system was introduced in 2002. The number includes regular hygiene passport tests, tests for special circumstances, hygiene passports granted on the basis of an examination and renewals of previously granted hygiene passports. The number of tests organised every year has remained at roughly the same level.

In 2018, a total of 59,060 hygiene passports were granted. As of the end of 2018, the total number of hygiene passports granted since the introduction of the system is 1,201,025. The number of hygiene passports granted each year has remained at roughly the same level (Table 3).

Table 3. *Hygiene passport tests organised and hygiene passports granted in 2002–2018*

Year	Hygiene passport tests, number	Hygiene passports, number
2018	10 885	59 060
2017	11 126	61 470
2016	11 064	60 862
2015	11 228	63 323
2014	11 965	67 525
2013	11 572	67 768
2012	11 595	66 877
2011	11 906	68 281
2010	11 920	69 552
2009	11 582	66 126
2008	11 629	63 944
2007	11 076	63 791
2006	10 868	67 288
2005	12 602	79 080
2004	14 694	108 777
2003	13 823	114 428
2002	4846	51 049
Total	197 920	1 201 025

The approval of one proficiency examiner was cancelled due to significant inadequacies and errors in their operation.

The audits of hygiene proficiency examiners carried out in 2009 to 2018 revealed at least minor remarks in the operations of almost every audited examiner. An average of 17% of the audits every year have resulted in the cancellation of a proficiency examiner's rights, and in some years, signs of deliberate criminal actions have been detected, resulting in requests for police investigation (Table 4). The approval of one proficiency examiner was cancelled in 2018 due to significant inadequacies and errors in their operation.

Table 4. Audits to proficiency examiners conducted by Evira and audit results in 2009–2018

Audit results				
Year	Examiners audited	Note	Cancellation of examiner's rights	Requests for police investigation
	persons	number	number	number
2018	17	16	1	0
2017	6	2	4	0
2016	6	4	2	0
2015	1	0	1	0
2014	2	1	0	0
2013	18	16	2	0
2012	40	34	6	0
2011	51	42	9	4
2010	35	32	3	1
2009	14	10	4	0
Total	190	157	32	5

Table 5 summarises the results of the Oiva inspections carried out by the food control authorities regarding the verification of hygiene proficiency. The results show that 92.5% of the inspected food premises received the Oiva rating of A, which indicates that the food sector operators are well aware of and comply with their obligations regarding the food hygiene proficiency of their employees. A total of 6.2% of all food premises had minor shortcomings in keeping their records regarding the competence of their employees, which led to a B rating. A small number of operators (1.3%) were rated C, which indicates that the operator had not ensured that the employees had hygiene passports and that records regarding the matter were not kept. Two registered food establishments received a D rating.

The Oiva results have slightly improved in comparison to 2017. The results of establishments have improved in comparison to the previous year, and the number of coercive measures taken has fallen to one third of the numbers in 2017.

Table 5. The results of the Oiva inspections regarding the verification of hygiene proficiency

The Oiva results in 2018									
Verification of hygiene proficiency									
Food premises	Inspected	Inspections	Results				Guidance and instruction	Notices	Coercive measures
			A	B	C	D			
	number	number	number (%)	number (%)	number (%)	number (%)	number	number	number
Establishments	302	347	323 (93.1)	19 (5.5)	5 (1.4)	0 (0.0)	22	6	0
Reported food premises	10040	10462	9,676 (92.5)	653 (6.2)	131 (1.3)	2 (0.0)	693	119	1
Total	10342	10809	9,999 (92.5)	672 (6.2)	136 (1.3)	2 (0.0)	715	125	1

2.4 Quality and accountability systems

No operator-specific applications regarding the national Sikava quality system for pork meat with the Quality Assurance label were submitted in 2018 (the total number of operators remained at ten, each of them operating one or more Quality Assurance approved sites).

2.5 Instructions for good practices

The instructions for good practices in the production of honey, drafted by the Finnish association of beekeepers (Suomen Mehiläishoitajain Liitto ry), were assessed in 2018.

[Eight instructions for good practices have been evaluated in the food and one in the feed sector.](https://www.ruokavirasto.fi/yritykset/elintarvikeala/elintarvikealan-yhteiset-vaatimukset/omavalvonta/hyvan-kaytannon-ohjeet/ruokaviraston-arvioimat-hyvan-kaytannon-ohjeet/) (In Finnish) (<https://www.ruokavirasto.fi/yritykset/elintarvikeala/elintarvikealan-yhteiset-vaatimukset/omavalvonta/hyvan-kaytannon-ohjeet/ruokaviraston-arvioimat-hyvan-kaytannon-ohjeet/>).

2.6 RASFF

In 2018, Finland reported 84 cases of non-compliance detected in Finland to the RASFF (Rapid Alert System for Food and Feed) system of the EU. The number of reported cases increased by 19 in comparison to the previous year and by 27 in comparison to 2016. 60 (71%) of the reports concerned food products, 16 (19%) feeds and 8 (10%) contact materials. The number of reports that concerned food products and contact materials increased significantly, whereas the number of reports that concerned feeds decreased slightly.

As before, the reports that Finland filed mostly concerned the poor microbiological quality of imported food products (14 food products and 16 batches of feed) and violations of regulations regarding plant protectants (14 reports). Out of the batches that were unfit for consumption, 50% were fresh vegetables, herbs and spices. Out of the 14 reports regarding plant protectants, as many as ten concerned tea.

39 (46%) of the reports that Finland filed were based on the border controls or market surveillance by Customs. This is a slightly smaller proportion than in the previous year. Both local food control activities and consumers' observations resulted in ten new RASFF reports each, which is a slightly higher number than usual in both cases. Finland also filed seven RASFF reports regarding food products as a result of non-compliances detected in the own check controls of companies.

Due to the special guarantees concerning salmonella applied in Finland, imported feed batches are tested for salmonella. In these investigations, either the operators' own check controls or sampling by authorities revealed that 18 batches contained salmonella (in the previous year, three batches fewer). These findings were reported in the RASFF system.

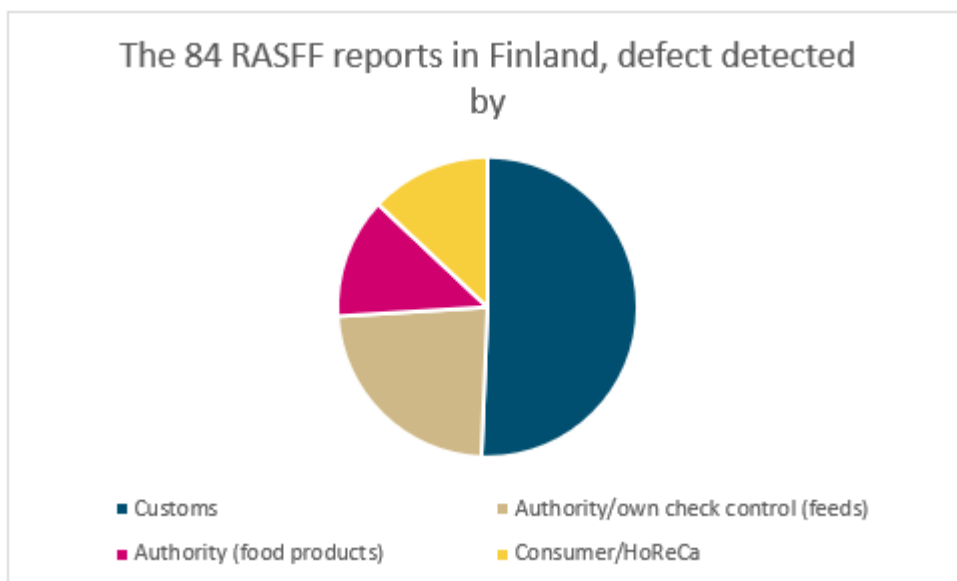


Figure 4. Reports filed by Finland to the RASFF system in 2018

In Finland, normal monitoring and, if necessary, recall measures are applied to the food products, feeds and contact materials reported by or to Finland using the RASFF system. Among other factors, the measures 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. If salmonella is found in feed, the feed is subjected to a chemical or thermal treatment to rid it of salmonella before use.

The RASFF reports received by Finland most frequently concerned small batches of special products that had been ordered directly from the countries of production by small operators. Among the 90 (23% increase in comparison to the previous year) reports regarding non-compliant food batches imported to Finland, only a few of them concerned products that were sold all over the country.

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

In 2018, Finland filed four reports in the Administrative Assistance and Cooperation System (AAC-AA) of the European Commission, requesting control activities from the food control authorities in Estonia, United Kingdom and Hungary. Two of the requests concerned the same case, i.e. the marketing of a dietary supplement produced abroad as a Finnish product. The third concerned a batch of cherries that was imported to Finland without the information on the origin of the product, and the fourth, the unlawful marketing of dietary supplements using medicinal claims.

Finland received 21 reports via the AAC-AA system. In six of them, Finnish authorities were requested to perform control activities. These six reports originated from Estonia, Sweden and Slovenia, and concerned the labelling of a meat product, allergen markings and errors in the labelling of a feed product. Finland received the requests to act concerning these cases twice. Thus, there were only three cases regardless of the six reports. The additional 16 AAC

reports were sent to all Member States. Finland received information on the high concentrations of carbon monoxide in batches of frozen tuna fish and the monitoring programme for dietary supplements from the AAC system.

Finland did not file any reports in the AAC-FF system for food frauds nor did Finland receive any reports that would have required any actions on the part of Finnish authorities. Finland received information on six cases that were reported to all Member States. The reports that Finland received contained information on the falsification of oregano, the substances harmful to human health found in dietary supplements for weight loss, the use of a prohibited colouring agent in pickled turnip and errors in the labelling of an alcoholic beverage.

2.8 Crime control in the food product chain

The collaboration between authorities to fight criminal activity in the food production chain was further enhanced. The training round to enhance the collaboration between various police districts in Finland was completed. In slightly over two years, nearly 500 officials from around the country attended the training that was organised in collaboration between the departments of financial offences at all Finnish police stations. Furthermore, education regarding food frauds was organised at the Police University College, seminar on grey economy and the National Bureau of Investigation. The Police Department of the Ministry of the Interior and the Eastern Finland Police Department also trained the food control authorities. Evira also participated in the mapping of the current situation in collaboration with 20 other authorities. The project committee was led by the Grey Economy Information Unit of the Finnish tax authority. The committee started publishing a website intended for citizens and political decision-makers at <https://www.vero.fi/en/grey-economy-crime/>. New operating models were developed to manage the increased number of suspected crimes and diversified monitoring cases.

As in the previous year, the food control authorities were informed of a higher number of suspected crimes in the food product chain, and a higher than before number of requests for police investigation was also filed. A few cases resulted in sentences at local courts or other decisions. For instance, a fish sector operator that acted against the approval decision was sentenced to 50 unit fines for a health crime.

2.9 Recalls

The increase in the number of recalls continued for the third year in a row. The number of recalls was 168, which is ten higher than during the previous year. The statistics from different years are not completely comparable due to slight differences in recording. However, the statistics give valuable insights into long-term trends (Figure 5).

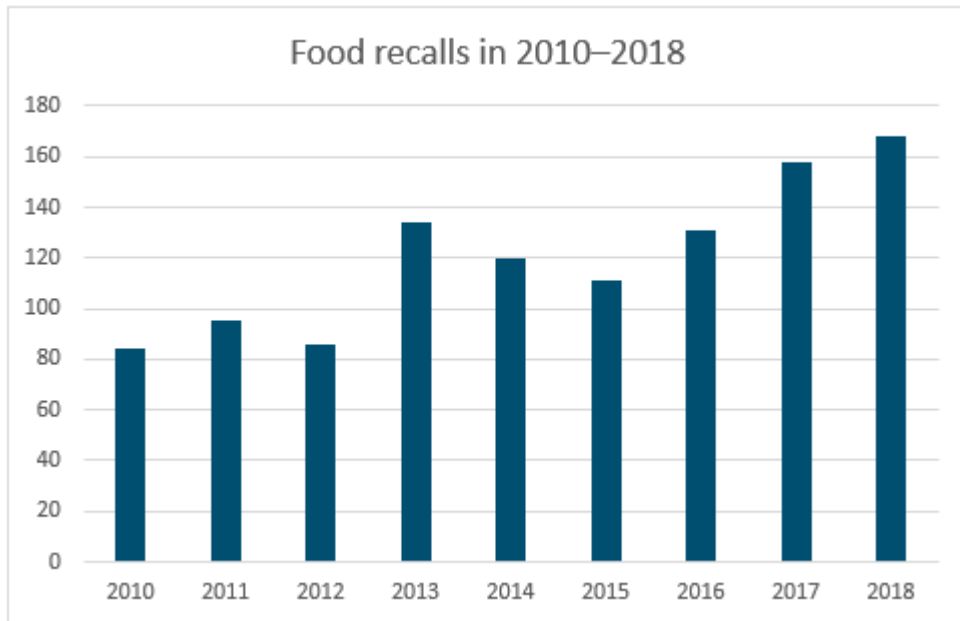


Figure 5. Food recalls in 2010-2018

The statistics also include the cases where the product had already reached the distribution chain but was not yet available to consumers. In these cases, the recall was carried out at the warehouse of the importer, wholesale dealer or retail trader, and the health of the consumers was not compromised.

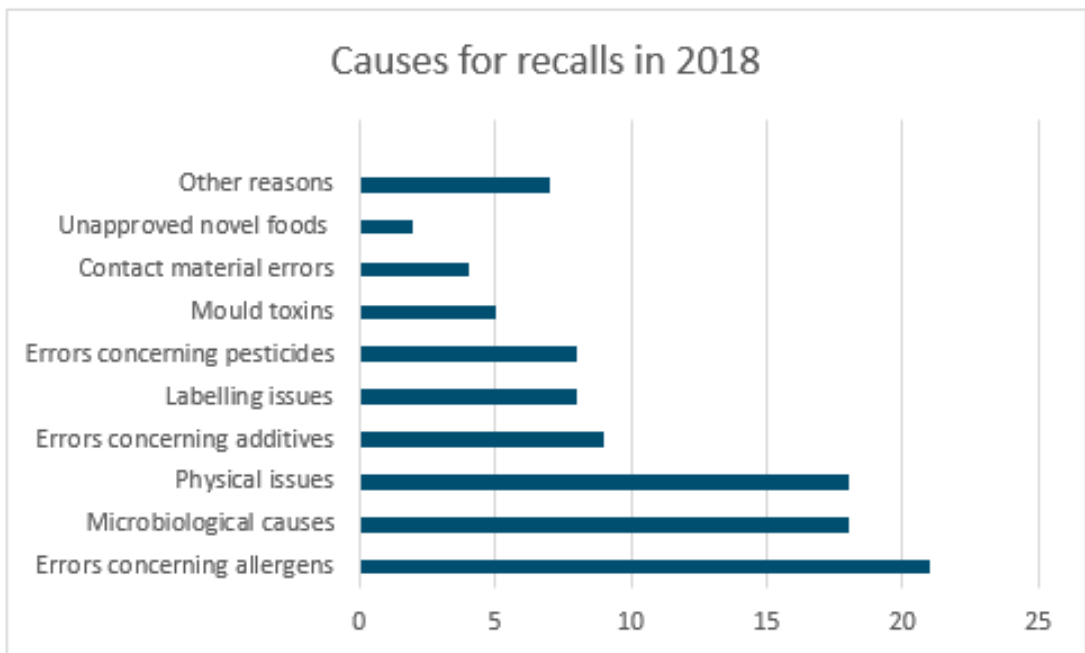


Figure 6. Causes of recalls in 2018

Recalls have been categorised according to the causes of recalls (Figure 6). In the year under review, there were no cases or issues that would have resulted in a large number of recalls at the same time. The most frequent cause for recalls was allergens, which resulted in as many as 36 recalls (21% of all recalls). The errors involving allergens have various causes, such as

allergen contaminations during production, labelling errors or using the wrong package for a product. In the previous year, the number of recalls due to allergen errors was only one third of the number of recalls in 2018. The reason for the variation is unknown.

Various microbiological issues (salmonella, listeria and other bacteria and moulds) and physical issues (metal, plastic, glass) were the second most common cause for recalls, with 18% of recalls each. Characteristic of the recalls due to microbiological issues in 2018 was the slightly higher than usual proportion of listeria cases, a total of 10 out of 31 cases. Five of these cases are connected to an establishment in Poland in which vegetables and corn in particular were handled. Listeria was also detected in two batches of Finnish fish and two batches of French cheese. The number of recalls due to salmonella decreased from seven during the previous year to five, and in the case of meat, salmonella was only detected in two product batches, as opposed to four during the previous year. Many of the recalls in this category concerned health hazards that only develop with time, which the operators were able to minimise by removing the products from the markets and informing consumers swiftly.

Physical issues, i.e. harmful objects that do not belong to the food but were found or are likely to have mixed into it, caused significantly more recalls during the year under review than before: while this issue caused 11 recalls during the previous year, the number rose to as many as 30 in 2018. Plastic and metal that were parts of the production equipment or packaging material were the most common causes for recalls. The recall carried out as a precaution by a Finnish raw material manufacturer resulted in a total of eight recalls of different products, some of which were industrial kitchen products. In this case, defects were not detected in any products that had reached the markets.

27% of the recalled food products and contact materials were of Finnish origin, 44% from other EU Member States and the remaining 29% from countries outside of the EU. The percentage of Finnish products remained at the same level as during the previous year, but products from other EU Member States and from countries outside of the EU had switched places on the list in comparison to the previous year.

Often, the information concerning errors that leads to a recall is received from the Rapid Alert System for Food and Feed (RASFF) of the EU. After a small drop, the amount of these cases rose again to 34% of all recalls in Finland. In the case of RASFF notifications, it is impossible to find out reliably whether the error was first detected in the operators' in-house controls, by consumers, by authorities or by other means. In cases that originate in Finland, it is easier to find this out.

The increase in the number of recalls in comparison to the previous year was particularly high in cases where an operator during an earlier or later phase of the production and distribution chain detected the issue. The number of these cases almost tripled to 28 cases. The number is roughly equal to the number of recalls carried out due to issues detected by consumers or industrial kitchen customers. The number of recalls resulting from the investigations by Customs, on the other hand, decreased almost by half to 19 cases. This may partly be explained by the fact that Customs carried out fewer investigations than before.

A definite reason for the increase in the number of cases is unknown, however, it seems to indicate that the food control chain is of high quality and functions well and that, at least in Finland, all operators and consumers are active in ensuring food safety.

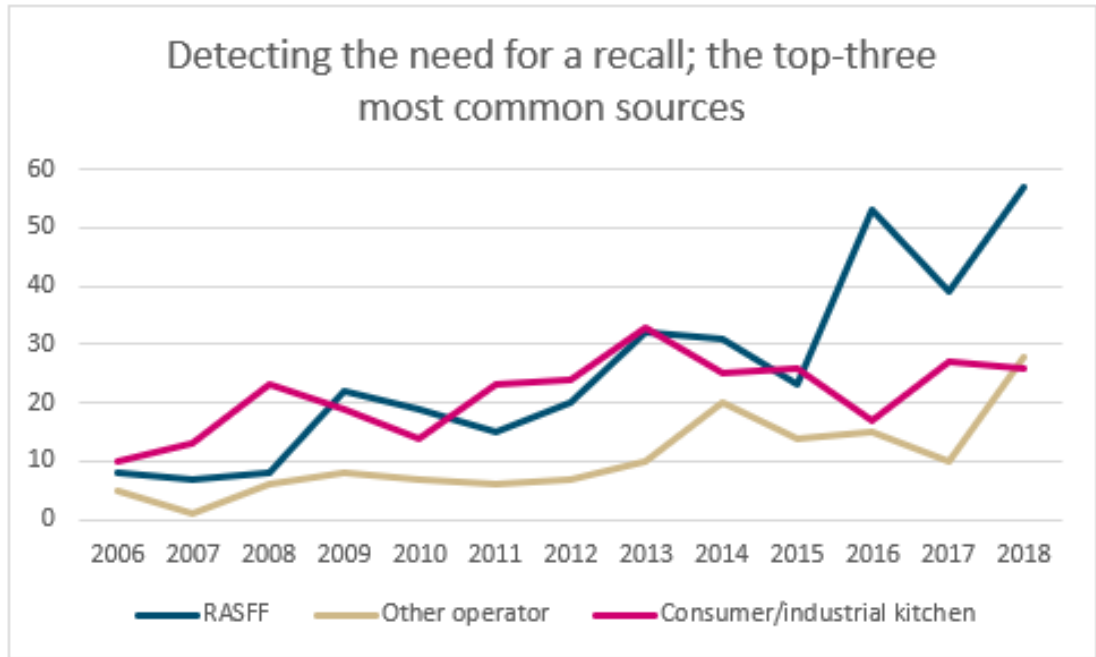


Figure 7. Detecting the need for a recall; the top three most common sources in 2018

2.10 Foodborne and household water borne outbreaks

In 2018, municipalities reported 100 suspected foodborne or waterborne outbreaks, which was a significantly higher number than the 60 cases reported in 2017. Municipalities filed an investigation report on all reported suspicions regarding the outbreaks in 2018.

In 2018, municipalities and Evira filed a total of 110 investigation reports concerning the investigations of outbreaks they carried out. Ten of these were filed without a preceding notification of a suspicion. Based on the investigation reports, 75 outbreaks were classified as food poisonings. The rest (35 cases) were either identified as other than foodborne or household water borne outbreaks (such as transmitted from one person to another or from swimming water) or it only affected one person, meaning the case was not classified as an outbreak (Figures 8 and 9).

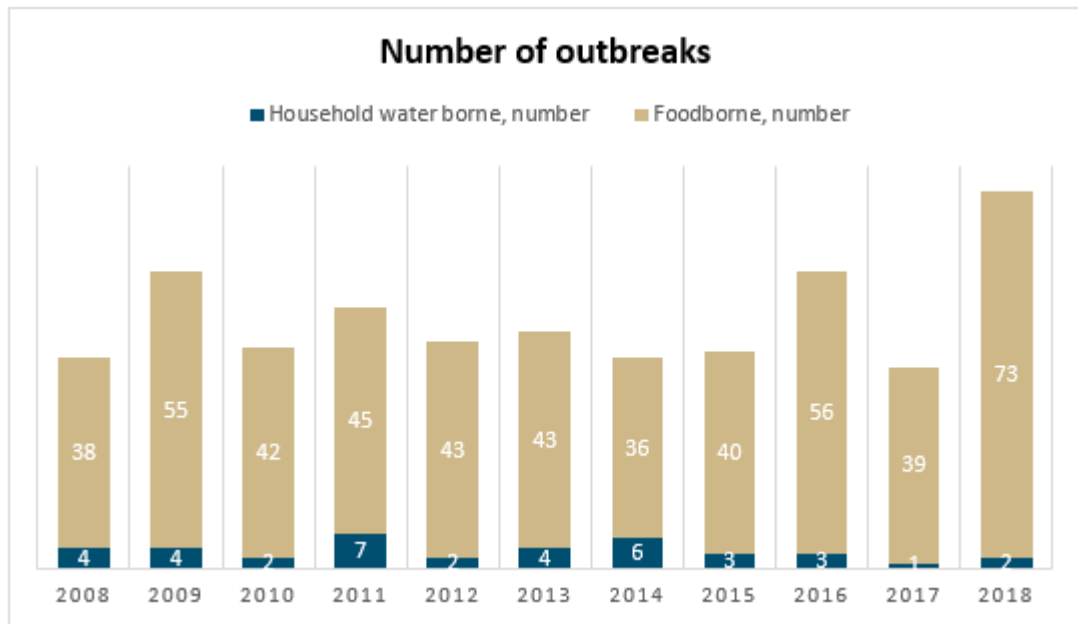


Figure 8. The number of foodborne and household water borne outbreaks in 2008–2018

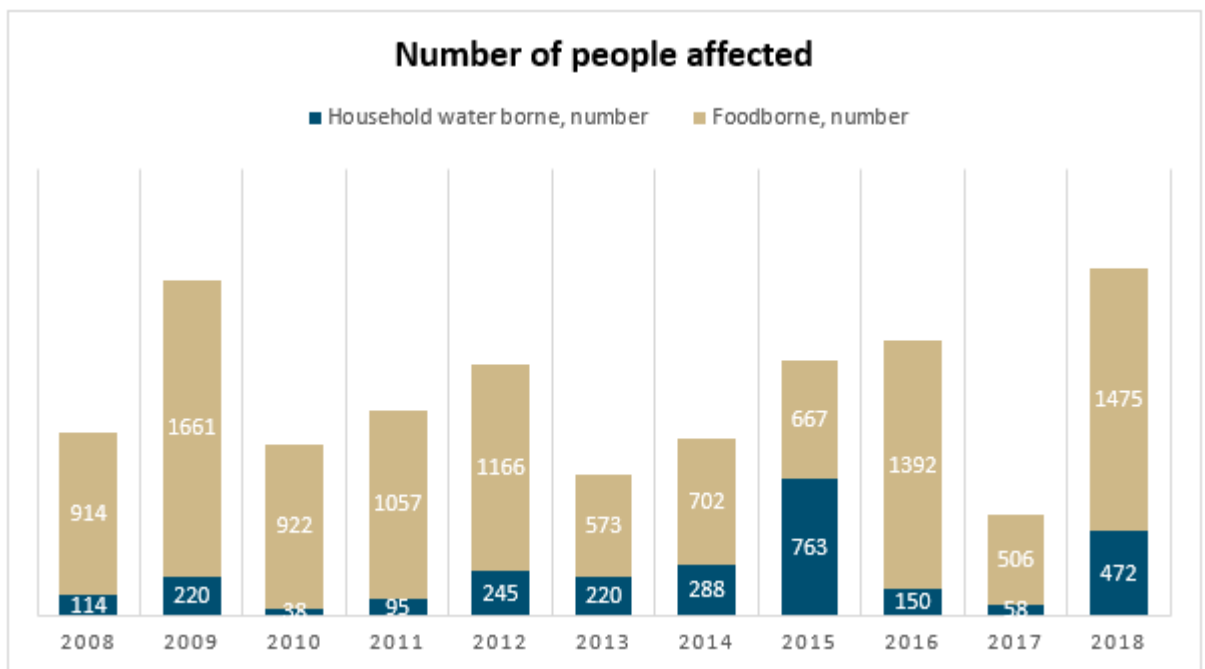


Figure 9. The number of people affected by foodborne and household water borne outbreaks in 2008–2018

The numbers of reported foodborne (73 outbreaks, 1,475 people affected) and household water borne (2 outbreaks, 472 people affected) outbreaks in 2018 were higher than during the years 2009 to 2017. Furthermore, the number of people affected was the highest during the reporting period (2009 to 2018).

The most widespread outbreak (463 people affected) in 2018 was caused by faecal contamination of tap water due to a pipe breakage. Norovirus and sapovirus as well as

Escherichia coli and *Clostridium perfringens* bacteria were detected in the water. Several pathogens, including norovirus, sapovirus and astrovirus as well as Enterotoxigenic *E. coli* (EPEC), were isolated from the people affected. In the statistics, the outbreak was classified as a norovirus outbreak according to the main pathogen. The number of people affected was high, which is typical of household water borne epidemics.

Among the most common causative agents for food poisonings, norovirus was still the most frequently identified pathogen that caused food poisonings (27 outbreaks, 1,430 people affected). In many of the cases (at least 13 outbreaks), an infected kitchen worker was identified as a factor that contributed to foodborne norovirus outbreaks. In the classification of norovirus outbreaks, it is difficult to assess whether the infection was transmitted by people, food or surfaces.

Salmonella Agama and *S. Newport* caused four outbreaks that together affected more than 50 people. The suspected causes of the outbreaks were cross-contamination, an infected person who prepared the food and a contaminated ingredient. *Campylobacter* caused three foodborne outbreaks. In one of them, the suspected source was insufficiently heated duck meat. *C. perfringens* caused one medium-scale outbreak transmitted by pork fillet. As is typical of food poisonings caused by spores, an erroneous combination of storage period and temperature contributed to the emergence of the *C. perfringens* outbreak.

Among the pathogens that cause more severe food poisonings, a multi-country outbreak of *Listeria monocytogenes* MLST6, transmitted by frozen corn/vegetables was reported in 2018. In Finland, 30 people were affected between 1 October 2016 and 1 October 2018. Three of the affected people died. The frozen corn was produced and processed in Hungary. Foodborne outbreaks of other pathogens that cause severe food poisonings (enterohemorrhagic *Escherichia coli* or EHEC, *Clostridium botulinum* and foodborne hepatitis viruses) were not reported in 2018. *Cryptosporidium* protozoan caused a medium-scale outbreak where the suspected transmitting agent was contaminated vegetables. In the case of chemical substances that cause food poisonings, histamine that was present in fresh tuna fish caused one small-scale outbreak. In the case of 32 outbreaks, the cause of the outbreak could not be identified (Figure 10).

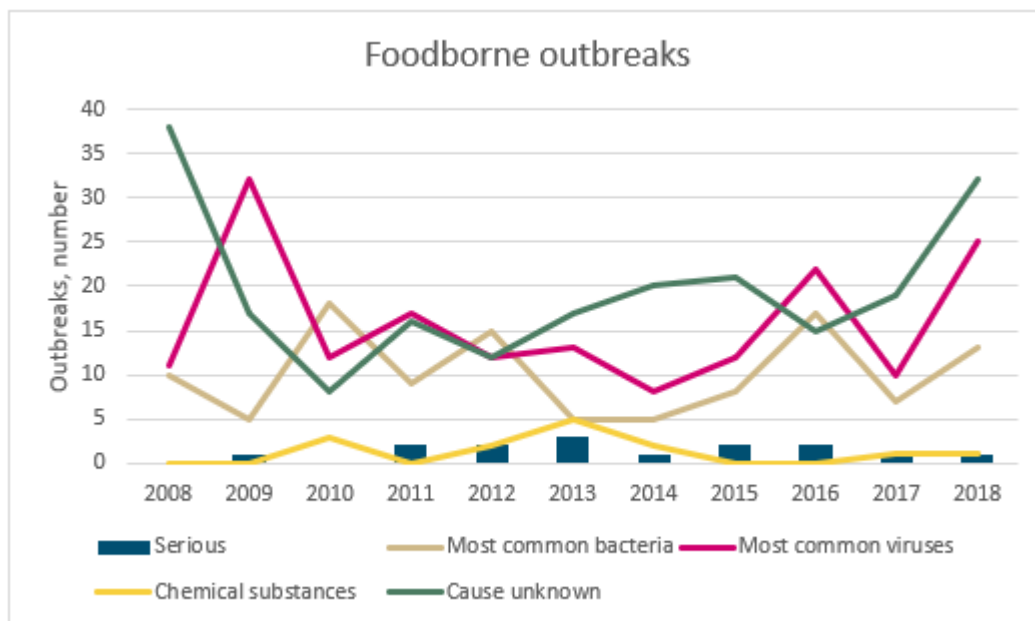


Figure 10. Foodborne outbreaks categorised according to pathogens and severity in 2008–2018. In a severe outbreak, listeria, EHEC or hepatitis was diagnosed in those affected.

3 IMPORT OF FOOD PRODUCTS AND CONTACT MATERIALS

3.1 Veterinary border control

653 (in 2017, 775) batches of animal-derived food products that were imported to Finland directly from a non-EU country were subjected to veterinary border control. 12 batches (1.8%) (in 2017, three batches or 0.4%) received a written notice and four (0.6%; in 2017, none) were rejected. The notices were given due to inadequate labelling (9), temperatures (2) or after an organoleptic assessment (1). The reasons for rejections were inadequate documentation (2) and unapproved import country (2).

3.2 Internal market import of animal-derived food products

In 2018, there were around 650 operators that imported animal-derived food products as a first point of entry from other EU Member States or another country within the internal market area. A total of 162 planned inspections targeted at operations concerning the first point of entry and 10 follow-up inspections were conducted.

Inspections of first points of entry were targeted according to risks, taking the type of imported food products, volumes, the effectiveness of own check control and the history of official control into account. Inspections were also targeted to pork and wild boar meat and products derived from them imported from regions where African swine fever is found. A large proportion of inspections applied to the first points of entry that imported products subject to special guarantees concerning salmonella (1688/2005/EC). Where possible, regulatory samples to be examined for salmonella were always taken in connection with the

inspections. In 2018, the total number of these samples was 38, two of which were found to contain salmonella. Salmonella was found in two different batches that contained Polish frozen raw chicken.

The most common irregularities at the points of first entry concerned the updating of reports and own check control plans, as well as negligence in own check control sampling.

3.3 Import of other than animal-derived food products

In 2018, Customs inspected a total of 2,656 batches of food and food contact materials. About 44%, i.e. 1,164 of the inspected batches were imported directly to Finland from non-EU countries. In the case of 26% (393) of the samples of intra-EU imports, the origin of the products was a non-EU country, resulting in the control activities focusing on products manufactured in countries outside of the EU.

The most common country for importing food products from was Spain with a total of 245 product batches that mostly contained fresh vegetables and fruit, spices and rice. Outside of the EU, the most common country for importing food products from was Thailand. 141 batches food products from Thailand, mostly tinned food and fresh products, were controlled.

According to product groups, the most frequently inspected products were fresh fruit and fruit products (485 batches) as well as fresh vegetables and vegetable products (402 batches).

Out of the product batches inspected in food controls, 212, i.e. about 8% of the batches, were found to be non-compliant. Slight negligence (cause for a notice) was detected in 306, i.e. 12% of the batches. The percentage of non-compliant batches was 11% in food products imported from non-EU countries and 6% in food products imported from EU Member States. Most commonly, non-compliant batches had been imported from Thailand. The following most common countries of origin for non-compliant products were China and the United States.

In absolute numbers, the highest number of defects was detected in the vegetable and fruit category, in which a total of 29 product batches (6% of the inspected batches) were found to be in violation against food regulations. Too high concentrations of pesticide residues, issues in microbiological quality and unauthorised irradiation were found in the fresh products that belong to this category. Among other things, errors in the use and markings of additives were found in vegetable products.

Customs took a total of 265 samples of organic food products. Five of them did not fulfil the regulations on organic production due to the pesticide residues they contained. Other violations against food regulations, such as errors in labelling, were also detected in organic food products. A total of 53 operators were subjected to the controls. Out of the inspected samples, 200 were taken from intra-community imports, and 65 samples from products imported from third countries.

Table 6. Food products inspected by Customs in 2018

Product group	Microbiological contamination, number	Other contamination, number	Composition, number	Labelling, number	Others, number	Rejections, number	Total number of samples	Rejections, %
Grains and grain preparations		5	1			6	110	5 %
Products with a grain dough				9		9	126	7 %
Vegetables and vegetable products	3	12	3	10	1	29	486	6 %
Legume seeds and legume products		3		9		12	32	38 %
Fruit and fruit products	1	8				9	530	2 %
Nuts and nut products		3		1		4	81	5 %
Oleiferous seeds and fruit						0	79	0 %
Starchy vegetables and tubers						0	14	0 %
Herbs, spices and the like	4	7			1	12	156	8 %
Fruit, vegetable and plant juices, beverages, spreads, etc.				4		4	69	6 %
Fish and fish products				1		1	10	10 %
Products imitating meat and dairy products				6		6	16	38 %
Hot beverages (coffee, cocoa and herbal beverages)						0	2	0 %
Waters, water-based soft drinks, etc.			2	8		10	57	18 %
Raw materials for hot beverages and infusions		8		17		25	102	25 %
Alcoholic beverages				2		2	26	8 %
Sweets and chocolate			6	3		9	36	25 %
Food products for adolescents						0	81	0 %
Special diet foods (incl. dietary supplements)		2	1	15	1	19	67	28 %
Compound foods				15		15	84	18 %
Seasoning products and cooking sauces	2		1	7		10	71	14 %
Cleaned, isolated ingredients	1			5		6	39	15 %
Food contact materials			20		4	24	382	6 %
Total number of samples							2656	

3.4 Import of food contact materials

A total of 382 batches of articles that come into contact with foods, such as cutlery, dishes and articles for processing or storing food, were controlled. 86% of the batches were imported directly to Finland from non-EU countries. China was the most common country of origin. 23 products, i.e. 6% of the inspected products, were deemed non-compliant, and minor errors were detected in 57 products (15%). The non-compliant products originated in China. Causes for rejection included harmful substances that come off of the materials (such as volatile compounds in equipment made from silicone material) in 11 products, excessively high levels of heavy metals (five products, mostly ceramic mugs) and errors in labelling and documentation.

4 EXPORT OF FOOD PRODUCTS AND FEED

4.1 Export control systems

In addition to the food control in accordance with the EU legislation, some destination countries of exports outside of the EU require additional control measures from central authorities to enable the export of food products to these countries (USA, China, Russia and the member states of the Eurasian Economic Union). The value of Finnish pork exported to China increased four-fold in 2018 when compared to 2017. In 2018, Russia was the most important destination country outside of the EU for Finnish food exports. Export control systems concerning China and the Eurasian Economic Union/Russia were further developed in collaboration with the food industry. The export conditions laid down by China and the Eurasian Economic Union were included in the daily or otherwise regular Oiva controls carried out in establishments. In addition, the harmonisation of these systems with the control system in the USA was promoted.

4.2 Prioritised market access initiatives

Opening up new export markets or exporting new food products to markets where access has already been granted in countries outside of the EU often requires extensive reports from authorities. These reports are requested from the central authority in each country (in Finland, the Finnish Food Authority). To enable the exports of products in the food product chain, several export questionnaires required by six different destination countries were completed in 2018 as a part of market access initiatives concerning these countries. The industry prioritised the projects according to sectors (meat, dairy, fish, eggs, feed, by-products).

The following reports were submitted to destination countries in 2018:

- Taiwan: animal disease notification
- Japan: HPAI regionalisation (avian influenza), cattle/BSE food hygiene, meat products
- China: fish feed, poultry meat
- South Korea: ice cream
- South Africa: PAP (processed animal protein) of poultry origin
- Additional information to Taiwan, South Korea, Japan and Singapore

In addition, the following initiatives were promoted where market access processes continue (the year in parentheses indicates the year of submission of the report):

- South Africa: pork (2015), poultry meat (2015)
- South Korea: poultry meat (2016), chicken egg (2017), egg products (2017), hatching eggs (2017), chicks (2017)
- The Philippines: pork (2017), poultry meat (2017)
- Indonesia: dairy products (2016)
- Japan: BSE/beef (2017)

- China: BSE/beef (2016)
- Singapore: poultry meat (2016), cooled pork meat (2017)
- Russia: fishery products (2017), dairy products (2017), poultry meat (2017), beef and small ruminant meat (2017)

4.3 Maintenance of export rights and other export promotion activities

In 2018, authorities co-operated to enable opening and maintaining export market access to countries that are not on the priority list of the industry. Examples of this include the participation in and organisation of the audits that Brazilian and Kenyan authorities conducted in dairy establishments, or the visit of Saudi Arabian authorities to Finland that made the export of Finnish fishery products to Saudi Arabia possible.

The export of animal-derived food products requires so-called veterinary certificates signed by a supervising official veterinarian that verifies the compliance of the food product with the export conditions listed in the certificate. The conditions concern animal diseases found in the production country and the food production and production methods, among other things. Unless the EU has a common accepted template for the certificate, the conditions and templates for the certificates will be agreed upon with the authorities in the destination country.

The following country-specific veterinary certificates were in preparation or agreed upon in 2018:

- Taiwan: egg certificate (prepared in 2018) and dairy certificate (prepared in 2018)
- Saudi Arabia: egg and egg product certificate (approved in 2018), certificate for fishery products was prepared
- Ukraine: certificate for live pigs (approved in 2018) and beef certificate (approved in 2018)
- South Africa: egg products (approved in 2018), animal protein of poultry origin (approved in 2018), expansion of the export of animal protein of pork origin to cover its use as fish feed (approved in 2018)
- Thailand: animal protein of poultry origin (approved in 2018)
- Japan: chicken eggs and egg products (approved in 2018)
- Macao: pork, beef and poultry meat (approved in 2018) and chicken eggs and egg products (approved in 2018)

The following general veterinary certificates used in exports that apply to exports to several countries were prepared in 2018:

- general certificate for the export of eggs and egg products
- general certificate for the export of insects and insect products
- general certificate for the export of processed animal protein to be used as feed

4.4 Development of export skills of small and medium-sized enterprises

The export initiative for SMEs promoted the export capacity and competitiveness of food sector SMEs.

An external operator (Frisky & Anjoy Oy) assessed the effectiveness of the initiative in autumn 2018. The initiative was assessed to be necessary and its continuation was recommended. According to the assessment, initiatives for SMEs gave assistance to more than 400 operators in 2016 to 2018, more than 80 per cent of which were companies.

5 FOOD PRODUCTION IN FINLAND

5.1 Meat inspection

In comparison to the previous year, the amount of meat approved in meat inspections decreased slightly in the case of red meat (beef, pork, lamb and horse meat) and increased slightly in the case of poultry meat (Figures 11–13).

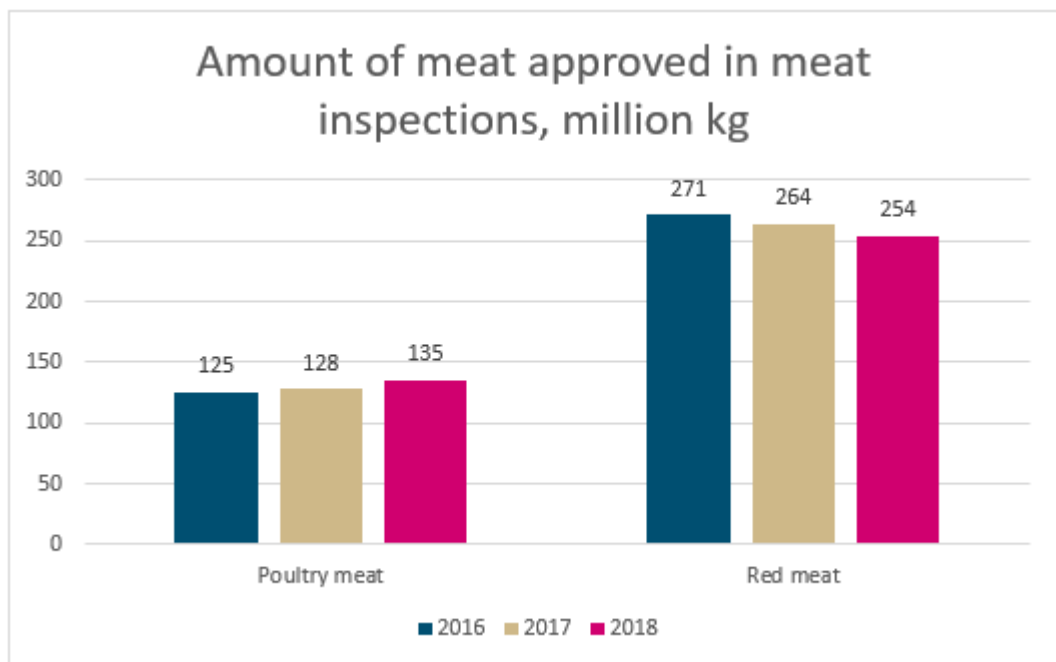


Figure 11. Amount of meat approved in meat inspections, million kg

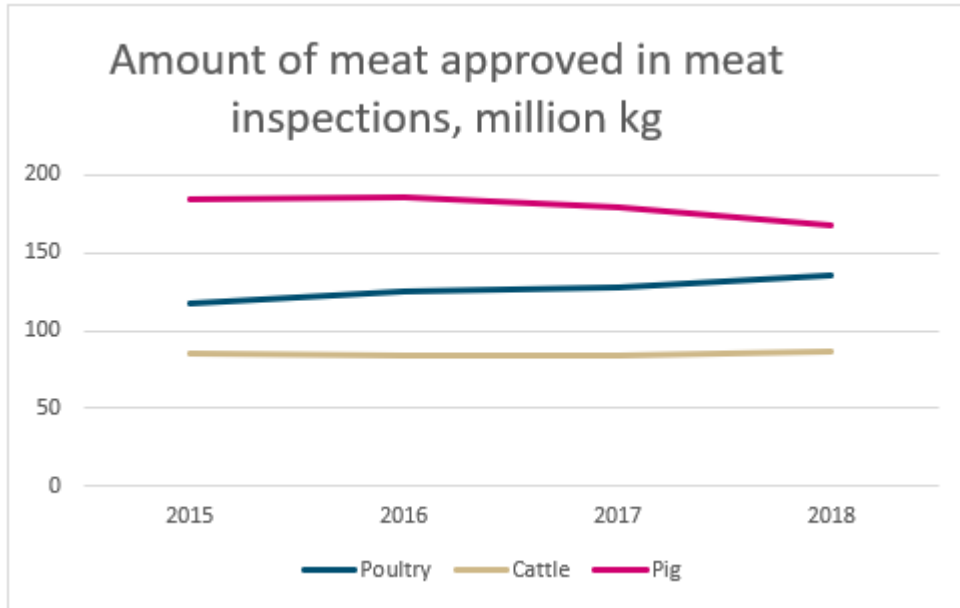


Figure 12. Amount of poultry, beef and pork meat approved in meat inspections

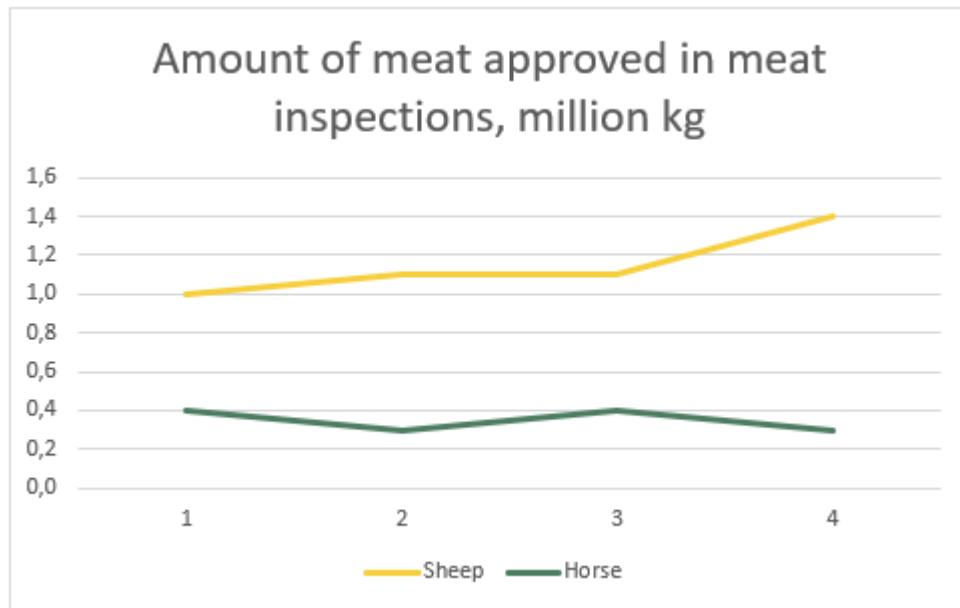


Figure 13. Amount of lamb and horse meat approved in meat inspections

In addition to domestic animals, 1,171 wild game animals, 696 farmed game animals and 55,158 reindeer were inspected. In addition to reindeer, some farmed game animals, elks, a bear, sheep and goats were inspected in reindeer slaughterhouses (Tables 7–9).

The numbers of partly or completely rejected carcasses and rejected live animals vary according to the species (Tables 7–9). There was also variation in the percentage of reasons for rejections between establishments. The variation in the percentage of rejections between establishments has been analysed as a part of the plan to standardise meat inspections. Different recording methods are among the reasons that explain the

differences. In the case of red meat, there are no significant changes in the numbers of carcasses rejected in meat inspections; the amount of rejected carcasses was 0.46% (0.42% in 2017). In the case of poultry, the percentage of rejections (4.9%) has risen slightly from year to year (3.7% in 2017 and 2.8% in 2016).

The most common grounds for rejection for pigs were Pleuropneumonia (in slaughter pigs, 22.4%) and damage caused by ascarid (in slaughter pigs, 6.1%). At less than one per cent, tail biting was a minor issue. The most common reasons for rejection in the case of bovines were contusions and bruises (3.0%) and pneumonia (2.5%). In the case of poultry, the most common causes for rejection include changes in body cavity or skin and slaughter errors. The changes caused by parasites were the most common reason for rejection in the case of reindeer. There were no significant changes in the reasons for rejection in comparison to the previous year.

Finland has the capacity to conduct visual meat inspections as stipulated by the EU regulations, as well as reducing the number of inspections for trichinae in pigs reared in recognised controlled housing conditions. However, these possibilities are rarely utilised since the countries to which products are exported require traditional meat inspections and comprehensive inspections for trichinae. There is currently only one pig holding in Finland that is recognised as having controlled housing conditions. Visual meat inspection in the case of pork meat has not been implemented in a significant scope.

Table 7. Meat inspection information concerning domestic animals and reindeer; slaughterhouses, low-capacity slaughterhouses and reindeer slaughterhouses

	Cattle	Slaughter pigs	Sows	Sheep	Goats	Horses	Reindeer	Total
Number of animals brought to slaughterhouse	273 710	1 785 775	33 162	64 093	353	1 171	55 158	2 213 422
Number of animals dead or put down before ante mortem inspection	359	649	110	11	2	0	7	1138
Number of animals rejected alive	78	67	5	27	0	22	2	201
Number of partly rejected carcasses	25 113	139 218	4 753	134	0	0	10 182	179 400
Number of rejected whole carcasses	1 786	7 525	596	65	0	7	93	10072
Number of approvals in meat inspections	271 446	1 777 534	32 451	63 990	351	1 142	55 056	2 201 970

Table 8. Meat inspection information concerning poultry; poultry slaughterhouses and low-capacity poultry slaughterhouses

	Broilers	Broiler breeders	Turkeys	Chickens	Ducks	Geese	Mallards	Total
Number of animals brought to slaughterhouse	79 932 752	534 576	914 384	3 070	4 688	4 766	12 884	81 407 120
% of animals that died spontaneously	0,141	0,056	0,08	0,087	0,128	0,042	0,217	0,14
% of animals rejected alive	0,077	0,001	0,11	0	0	0	0,008	0,077
% of partly rejected carcasses	4,111	4,171	6,955	0	1,474	0	0,233	4,142
% of rejected whole carcasses	4,849	20,517	5,046	4,56	3,311	0,126	0,078	4,953

Table 9. Meat inspection information concerning farmed game and lagomorphs (rabbits); slaughterhouses, low-capacity slaughterhouses and reindeer slaughterhouses

	Cervids	Ostriches and emus	Lagomorphs	Wild boar	Others
Inspected	336	37	6	242	75
Rejected completely	3	0	0	0	0
Rejected partly	44	0	0	0	1

Table 10. Meat inspections of wild game; game handling establishments and reindeer slaughterhouses

	Elk	Other cervids	Bear	Seal	Wild boar	Others
Inspected	306	803	50	0	0	12
Rejected completely	15	22	4	0	0	0
Rejected partly	22	34	0	0	0	1

Traditionally, reindeer are also slaughtered outside of slaughterhouses in the reindeer herding area. The meat obtained from these reindeer is used in the households of the producers (reindeer owners). Some of the meat is sold directly to consumers in the reindeer herding area without meat inspection, or it will be dried and sold directly to consumers in the reindeer herding area. There is no exact information available on the uninspected reindeer meat that is sold directly. Some of the reindeer meat used by the producers originates from the reindeer slaughtered in slaughterhouses that have passed meat inspection. Similarly, a large proportion of the reindeer meat sold directly has been slaughtered in a slaughterhouse and introduced to meat inspection. Based on the information in reindeer records and statistics of slaughtered animals, the Regional State Administrative Agency for Lapland and the Finnish Reindeer Herders' Association estimate that about 65 to 70% of the slaughtered reindeer are slaughtered in slaughterhouses and about 25 to 30% outside of slaughterhouses. The amount of uninspected reindeer meat used by the producers in their own homes or sold directly is not known.

Reindeer are raised and slaughtered in a very small scale outside of the reindeer herding area. There the reindeer are slaughtered in slaughterhouses approved for farmed game, and they are classified as farmed game in meat inspection statistics.

Only a small amount of hunted wild game is taken to approved game handling establishments or slaughterhouses for meat inspection. The majority of the game meat is used uninspected at the hunters' households. A small proportion of wild game is sold directly to consumers or retailed uninspected. Information on the amount of game and game meat that is sold uninspected is not available. According to the Finnish Wildlife Agency, 58,217 elks, 335 bears and 882 wild boars were hunted in 2018. 306 elks (0.5% of those killed) and 50 bears (15% of those killed) were subjected to meat inspection. Wild boars living in the wild were not inspected at all (Table 10).

5.2 Monitoring of slaughterhouses and establishments connected to them

The numbers of establishments monitored by Evira in 2018 are presented in Figure 14.

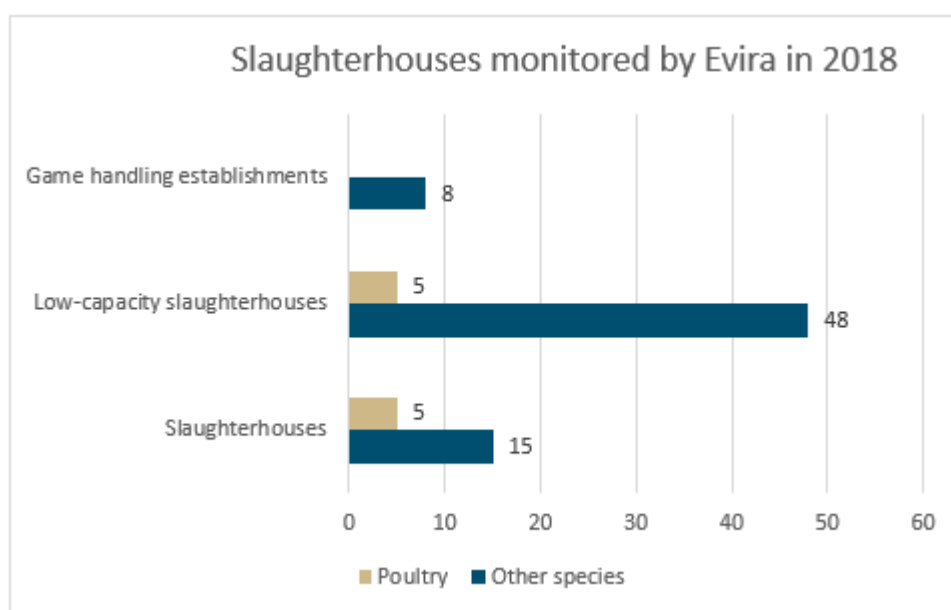


Figure 14. Slaughterhouses monitored by Evira in 2018

The total number of slaughterhouses grew by one when one low-capacity slaughterhouse made the transition to a large-capacity slaughterhouse. Five new low-capacity slaughterhouses were approved. Furthermore, one meat cutting facility that operates in connection with a low-capacity slaughterhouse but under its own establishment code was approved. There were no changes in the number of game handling establishments.

Evira organised the control of 53 low-capacity slaughterhouses or game handling establishments, whereas in three cases the controls and meat inspections were carried out by a veterinarian employed by the municipality.

At the end of 2018, there were 37 full-time official veterinarians (36 in 2017) employed by Evira and 48 meat inspectors (46 in 2017) working in slaughterhouses. Over the course of 2018, 79 part-time official veterinarians worked in low-capacity slaughterhouses and game handling establishments.

A total of 92 inspection-specific notices were given in the slaughterhouse control to 13 slaughterhouses (in 2017, 107) and 75 notices to 16 low-capacity slaughterhouses (in 2017, 73).

In connection with the control of facilities, administrative coercive measures were taken six times in slaughterhouses (in 2017, 7 times) and seven times in low-capacity slaughterhouses (in 2017, twice). The coercive measures taken in connection with slaughterhouse controls concerned shortcomings in the maintenance of facilities and equipment, food production hygiene, work hygiene of personnel and the cleanliness of the establishment's surfaces, fixtures, equipment and tools, among other things.

81% of the slaughterhouses, low-capacity slaughterhouses and approved establishments that are in connection with them were rated excellent or good (A or B, respectively), and 19% were rated as requiring improvement or poor (C or D, respectively) (Table 11). The results of controls of establishments in connection with slaughterhouses are not available separately, but the results of the establishments are included in the control results of the slaughterhouses.

In the slaughterhouses and low-capacity slaughterhouses controlled by Evira and the approved establishments in connection with them, the facility inspections conducted in 2018 focused on the control of the facilities and production hygiene, as well as the operations and training of the personnel. In slaughterhouses, low-capacity slaughterhouses and approved establishments in connection with them, the highest number of inspections concerned the production hygiene of food products (288 inspections), the cleanliness of the facilities, surfaces and equipment (273 inspections), as well as the operations and training of the personnel (232 inspections). Very few inspections were conducted on the composition of food products and information provided on foods. For example, a total of 38 inspections were conducted on the information provided on foods. A total of 17 packaging and food contact materials were inspected (in 2017, none).

In relative terms, the highest number of shortcomings (rated as requiring improvement or poor) were detected in the cleanliness of the facilities, surfaces and equipment (273 inspections, 8% rated C or D) and the maintenance of the facilities, surfaces and equipment (119 inspections, 6% rated C or D). Shortcomings were not detected in the composition of food products or labelling (Figure 15).

The Regional State Administrative Agency for Lapland organised the control of 19 reindeer slaughterhouses and seven approved establishments connected to them in 2018. The number of reindeer slaughterhouses has remained unchanged for several years. The Regional State Administrative Agency for Lapland employed 62 part-time official veterinarians in 2018. Some of them only carried out *ante mortem* inspections at reindeer roundup sites. An estimated 3.5 full-time equivalents (FTE) of part-time official veterinarians' work was invested in reindeer meat inspections.

The publication of the control data regarding reindeer slaughterhouses and approved establishments connected to them in the Oiva system started in 2016. In 2018, the inspection-specific rating of excellent or good (A or B) was awarded to 68% (80% in 2017) and the rating of requires improvement or poor (C or D) to 32% (20% in 2017) of them. The highest number of shortcomings was detected in the operations and training of the personnel, sampling and own check inspections, general compliance of own check controls and in the production hygiene of food products. The Regional State Administrative Agency

for Lapland took coercive measures in the control of one reindeer slaughterhouse and the establishment in connection with it under its supervision in 2018.

Table 11. The number of controls in slaughterhouses, low-capacity slaughterhouses and game handling establishments, as well as approved establishments connected to them under the control of Evira, and in reindeer slaughterhouses and approved establishments connected to them under the control of the Regional State Administrative Agency for Lapland in 2018

	Sites			Inspections	
	Total			Planned	Other than planned
	Total	Inspected		number	Total
	number	number	%		number
Slaughterhouses, low-capacity slaughterhouses and game handling establishments, and the approved establishments connected to them	118	47	40	228	4
Reindeer slaughterhouses and the approved establishments connected to them	26(*)	16	62	29	0

*) Reindeer slaughterhouses and the approved establishments connected to them have been recorded as separate control sites, unlike in the case of the establishments connected to other slaughterhouses that are mainly recorded as one control unit with the slaughterhouse in question.

Table 12. The facility control results in slaughterhouses, low-capacity slaughterhouses and game handling establishments, as well as approved establishments connected to them under the control of Evira, and in reindeer slaughterhouses and approved establishments connected to them under the control of the Regional State Administrative Agency for Lapland

	Inspections	Results				Sanctions
	Planned inspections, incl. follow-up inspections	Inspection-specific results, %				Inspections that led to a notice or the use of coercive measures
	number	A	B	C	D	number
Slaughterhouses, low-capacity slaughterhouses and game handling establishments,	228	31,6	49,8	15,6	3,1	80 (69+11)
Reindeer slaughterhouses and the approved establishments connected to them	29	28,6	39,3	28,6	3,6	16 (15+1)

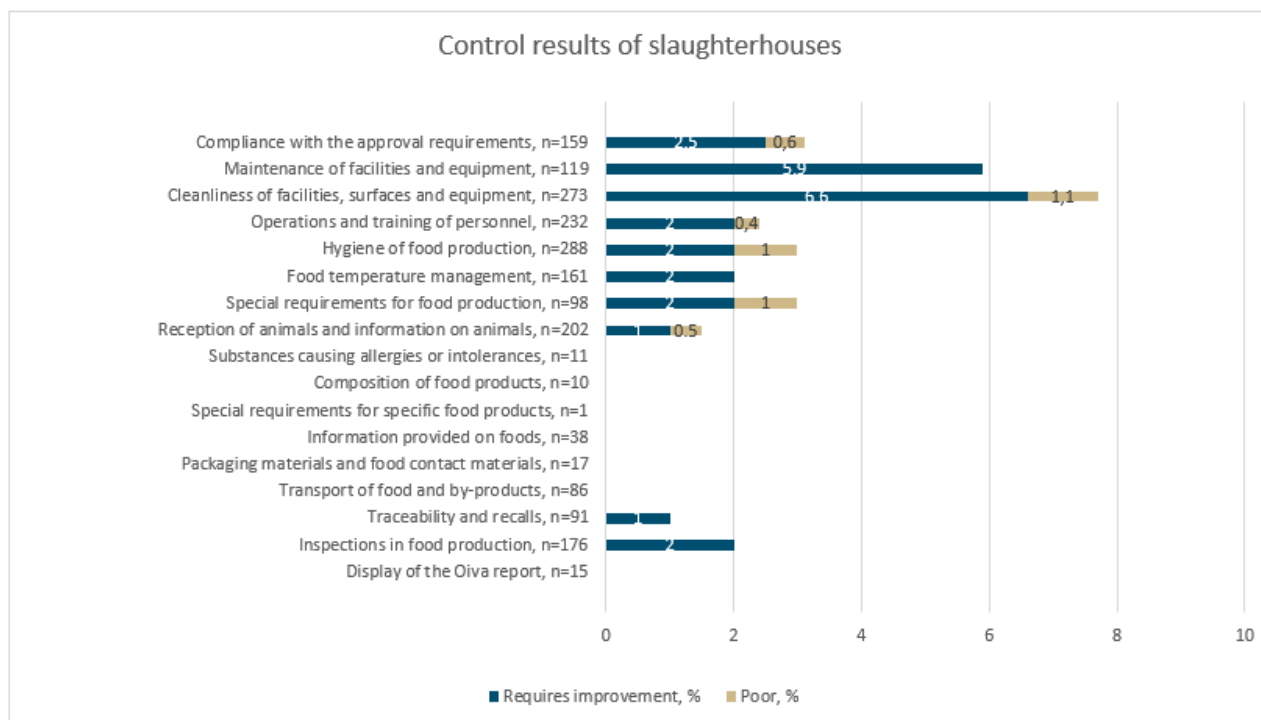


Figure 15. Requires improvement (C) and poor (D) ratings (number and %) concerning the requirements imposed on slaughterhouses; n = the number of inspections regarding the requirement in question

5.3 Approved food establishments controlled by municipalities

Figure 16 presents the number of approved establishments according to sectors in 2015–2018.

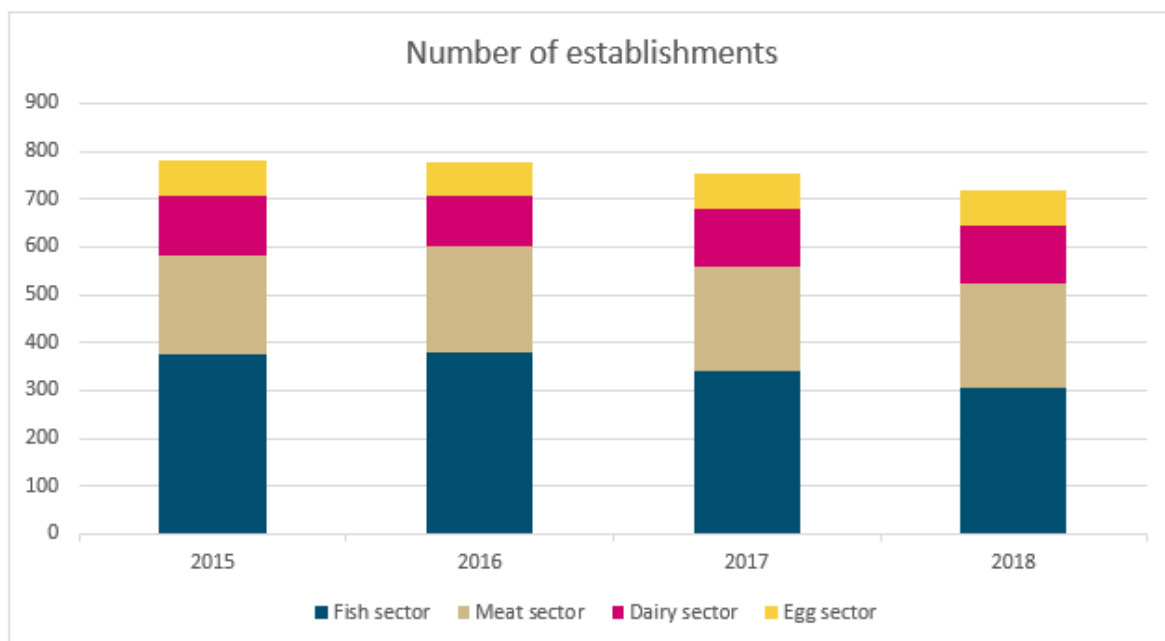


Figure 16. The numbers of establishments in 2015–2018

There were no significant changes in the number of establishments that produce animal-derived food products (fish, meat, dairy and egg sector establishments). The meat establishments only cover establishments in the meat sector that municipalities control. The establishments in the meat sector controlled by Evira are covered in Chapter 5.2.

Table 13. The number of establishments and the inspections

Establishment	Sites				Inspections		
	Primary sites				Approval inspections	Other than planned inspections	Total
	total	inspected sites					
	number	number		%			
Fish sector establishment	306	225		74	14	17	469
Meat sector establishment	219	173		79	4	11	544
Dairy sector establishment	121	95		79	7	12	251
Egg sector establishment	71	49		69	2	1	66

About 74% of fish sector establishments were inspected. 4% of the inspections were other than planned inspections.

About 79% of meat sector establishments were inspected. An average of three inspections were conducted in the inspected meat sector establishments in 2018. About 2% of the inspections were other than planned inspections.

The percentage of dairy sector establishments that were not inspected in 2018 was about 21%. About 10% of the inspections were other than planned inspections.

One in three egg sector establishments were not inspected in 2018, regardless of the recommended inspection frequency of at least once a year, depending on the size of the establishment. About 2% of the inspections were other than planned inspections.

Due to a defect in the data system, the figures representing the inspected establishments contain some errors. In reality, the number of inspected establishments is slightly higher.

Table 14. *Inspection-specific assessments of establishments and sanctions*

Establishment	Inspections	Results				Sanctions
	inspections, incl. follow-up inspections	Inspection-specific results, %				Inspections that led to a notice or the use of coercive measures
	number	A	B	C	D	number
Fish sector establishment	453	38,9	47,7	12,3	1,2	61
Meat sector establishment	533	36	44,1	15,8	0,7	97
Dairy sector establishment	233	62,8	31	5,8	0,4	22
Egg sector establishment	65	65,1	31,7	1,6	1,6	2

A total of 1,647 planned inspections were conducted in fish, meat, dairy and egg sector establishments. In these facility inspections, an average of 90% of the cases were rated excellent or good, and 10% as requiring improvement or poor (C or D, respectively).

The inspection-specific rating of excellent or good (A or B) was awarded to 87% and the rating requiring improvement or poor (C or D) to 13% of the fish sector establishments (Table 14). About 13% of the inspections led to notices requiring improvement or coercive measures.

About 80% of meat sector establishments achieved an excellent or good inspection-specific result and 17% were rated as requiring improvement or poor. About 18% of the inspections led to notices requiring improvement or coercive measures.

In the case of dairy sector establishments, 94% of the inspected sites achieved an excellent or good inspection-specific result (A or B) (Table 14). The rating of requires improvement (C) was only given to less than 6% of the dairy sector establishments. None of the inspected dairy sector establishments was rated poor (D). Notices were given to 9% of the inspected sites.

In the case of egg sector establishments, 97% of the inspected sites achieved an excellent or good inspection-specific result (A or B), whereas 1.6% were rated as requiring improvement

(c) and another 1.6% were rated poor (D) (Table 14). Three per cent of the inspections resulted in notices requiring improvement. Coercive measures were not taken.

Table 15. The distribution of the requirement-specific results of planned inspections and follow-up inspections

Establishment	Planned inspections					Follow-up inspections					
	Inspections number	Distribution of evaluations concerning the requirements imposed on establishments, %				Follow-up inspections required*	Follow-up inspections conducted number	Distribution of evaluations concerning the requirements imposed on establishments, %			
		A	B	C	D			A	B	C	D
Fish sector establishment	561	84,7	12,9	2,1	0,3	64	22	59,5	27,7	8,1	4,6
Meat sector establishment	544	82,1	14,7	3,1	0,1	94	32	50,2	29,7	18,3	1,8
Dairy sector establishment	243	93,3	5,9	0,7	0,1	23	6	77,3	9,1	13,6	0
Egg sector establishment	66	96,1	3,6	0,1	0,2	2	2	50,0	50,0	0	0

* One or more results of requires improvement (C) or poor (D) given in the inspection. The figures are shown according to sectors; thus, the number of follow-up inspections required may be lower as one establishment may have received several C or D ratings in various sectors.

561 planned inspections were conducted in fish sector establishments. The number of follow-up inspections was 22. In the follow-up inspections, 87% of the results were excellent (A) or good (B). The percentage of requires improvement (C) or poor (D) results was 13% (Table 15). It is also possible that other shortcomings were detected during the follow-up inspections, which may have led to the results not improving.

In the case of all inspections of labelling in fish sector establishments (n=111), 92% of the inspections resulted in a rating of excellent or good.

544 planned inspections were conducted in meat sector establishments. The number of follow-up inspections was 94. In the follow-up inspections, 80% of the results were excellent (A) or good (B). In about 20% of the cases, the result remained requires improvement or poor in the follow-up inspection (Table 15).

Meat sector establishments were subjected to labelling inspections slightly more frequently than fish sector establishments (n=141). A total of 92% of the labelling inspections resulted in excellent or good ratings, which is more or less on par with the fish sector establishments.

243 planned inspections were conducted in dairy sector establishments. The number of follow-up inspections was 6. Of the inspected items, 86% were rated A or B, and 14% were rated C (Table 15).

The number of labelling inspections in dairy sector establishments was low (58), and the results were primarily good (97%).

66 planned inspections were conducted in egg sector establishments. The number of follow-up inspections was 2. In the follow-up inspections, 100% of the results were excellent (A) or good (B) (Table 15).

Very few inspections were conducted on labelling in egg sector establishments.

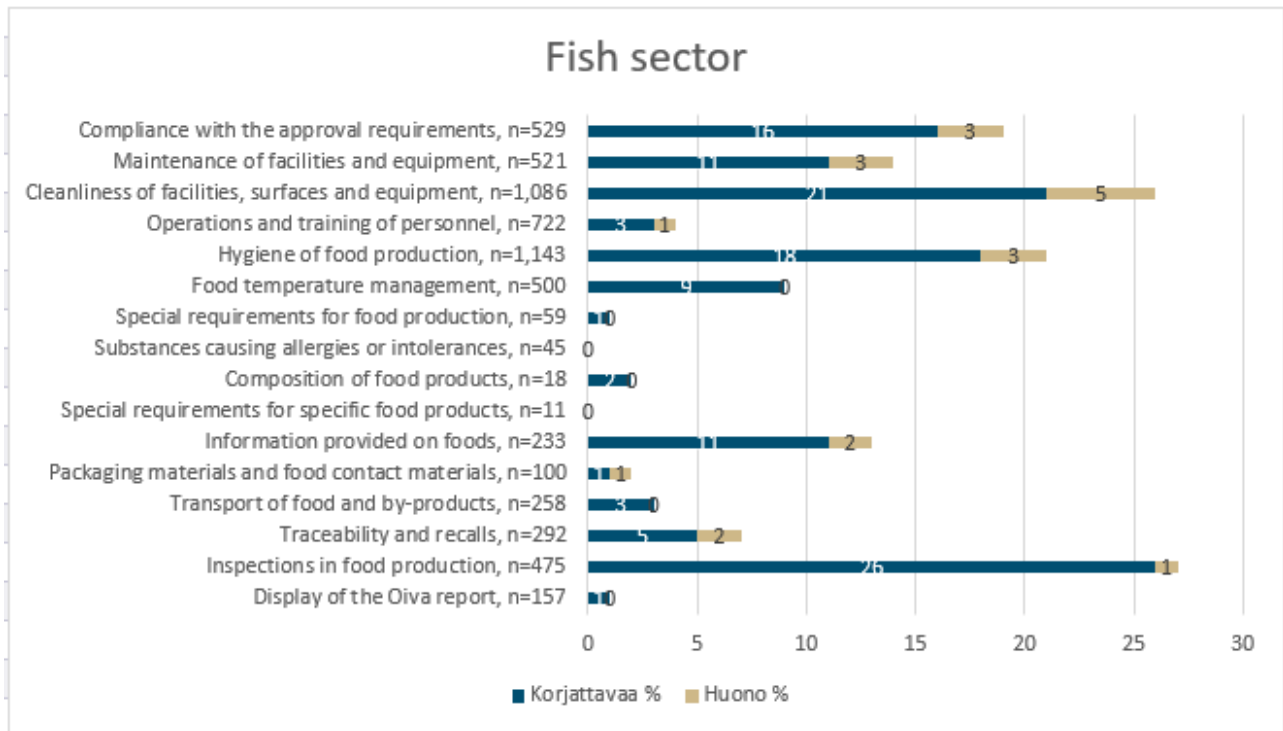


Figure 17. The requires improvement and poor ratings (number and %) concerning the requirements imposed on fish sector establishments; n = the number of inspections regarding the requirement in question

In 2018, the inspections in fish sector establishments focused on the production hygiene of food products, the cleanliness of the facilities, surfaces and equipment, and the operation and training of the personnel. These have been the most frequently inspected items in previous years as well.

In fish sector establishments, the highest number of shortcomings (requires improvement or poor, i.e. C or D, respectively) was detected in the information provided on food products and in the inspections in food production (Figure 17).

In fish sector establishments, only a very small number of inspections was conducted on substances that cause allergies and intolerances and the composition of food products in general, even though the information provided on food products was inspected. In the case of fish sector establishments, the majority of shortcomings in the information provided on food products was found in labelling. In the inspections in food production, the highest number of shortcomings was detected in sampling and own check control inspections, as well as the own check control for listeria.

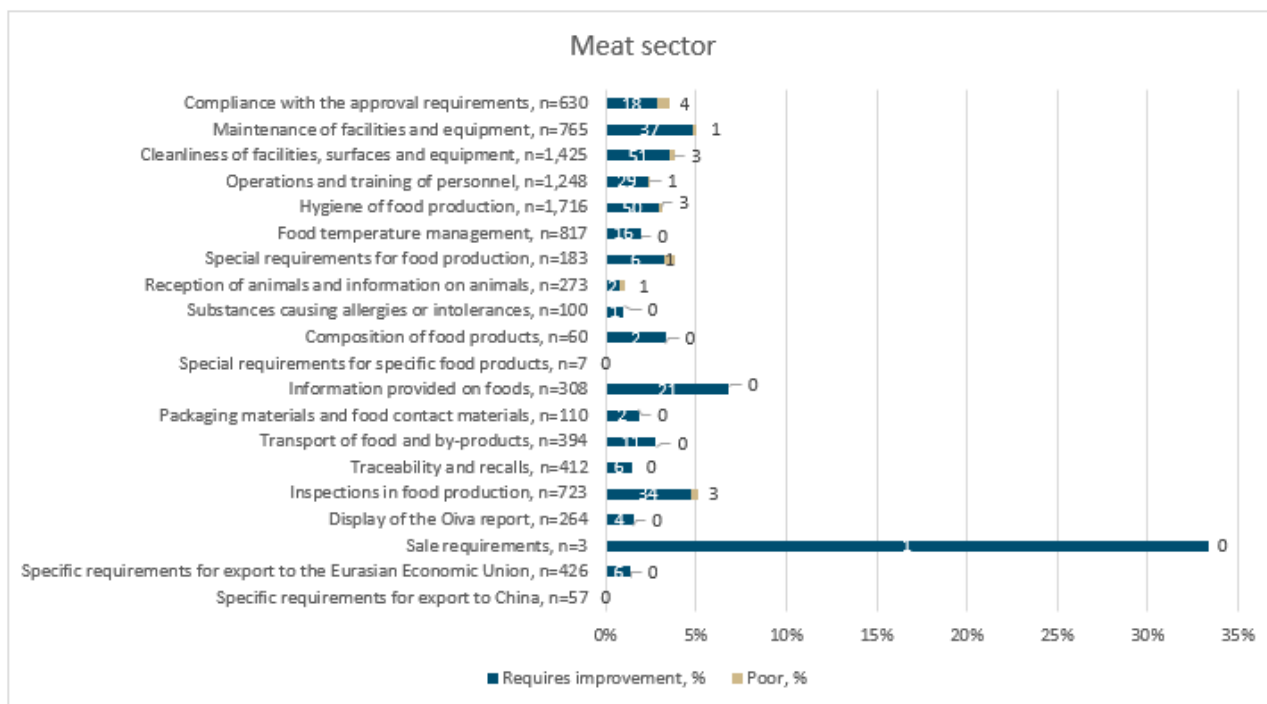


Figure 18. The requires improvement and poor ratings (number and %) concerning the requirements imposed on meat sector establishments; n = the number of inspections regarding the requirement in question. In this figure, the numbers also include the slaughterhouses and meat sector establishments that Evira controls.

In meat sector establishments, the highest number of inspections concerned the cleanliness of the facilities, surfaces and equipment (1,425 inspections), the operations and training of the personnel (1,248 inspections), and the production hygiene of food products (1,716 inspections).

In meat sector establishments, the highest number of shortcomings (requires improvement or poor results), in relative terms, was detected in the maintenance of facilities and equipment (765 inspections), the information provided on food products (308 inspections) and the inspections in food production (723 inspections). In these items, the percentages of C and D ratings were five, seven and five per cent, respectively. In the inspections of sales requirements, 33% of the inspections resulted in a C or D rating, but this item was only inspected three times. In meat sector establishments, only a very small number of inspections was conducted on the composition of food products even though the information provided on foods was inspected. General labelling was the most frequently inspected item in the information provided on food products (Figure 18).

Figure 16. The requires improvement and poor ratings concerning the requirements imposed on dairy sector establishments

	Number of inspectio	C, %	D, %
Sale requirements	9	0	0
Display of the Oiva report	101	0	0
Inspections in food production	382	1,3	0
Traceability and recalls	132	0	0
Transport of food and by-products	128	0,8	0
Packaging materials and food contact materials	46	4,3	2,2
Information provided on foods	130	1,5	0
Reception of animals and information on animals	1	0	0
Substances that cause allergies and intolerances	32	0	0
Composition of food products	30	0	0
Special requirements for specific food products	4	0	0
Special requirements for food production	2	0	0
Food temperature management	201	1,5	0,5
Hygiene of food production	644	0,6	0
Operations and training of personnel	456	0,4	0
Cleanliness of facilities, surfaces and equipment	541	0,4	0
Maintenance of facilities and equipment	295	0,3	0
Compliance with the approval requirements	275	0,7	0
Specific requirements for export to the Eurasian Econ	283	0	0
Specific requirements for export to China	149	0	0

The control in dairy sector establishments in 2018 focused on the production hygiene of food products (644 inspections). The cleanliness of the facilities, surfaces and equipment, as well as the operations and training of the personnel were also controlled frequently in comparison to other items (541 and 456 inspections, respectively). The increase in the number of inspections focusing on these items is as high as over 40 to 50 inspections.

As for the Oiva assessments, the number of controls regarding the special requirements for food production, special requirements for specific food products and the sale requirements continued to be the lowest in absolute numbers (2 to 8 inspections).

In dairy sector establishments, the three items most frequently rated as requiring improvement (C) were inspections in food production (1.3%, of 382 inspections), production hygiene of food products (0.6% of 644 inspections) and temperature management of food products (1.5% of 208 inspections). The rating was poor (D) in 0.5% of the inspections of temperature management of food products (208 inspections in total) and in 2.2% of the inspections of packaging and food contact materials (46 inspections in total). Only a small amount of information provided on food products was controlled, with a focus on general information provided on food products. The composition of food products was also subjected to few inspections (Table 16).

Table 17. The requires improvement and poor ratings concerning the requirements imposed on egg sector establishments

	Number of inspectio	C, %	D, %
Sale requirements	113	0	0,9
Display of the Oiva report	16	0	0
Inspections in food production	37	0	0
Traceability and recalls	48	0	2,1
Transport of food and by-products	74	0	0
Packaging materials and food contact materials	18	0	0
Information provided on foods	28	0	0
Reception of animals and information on animals	3	0	0
Special requirements for food production	5	0	0
Food temperature management	26	0	0
Hygiene of food production	138	0	0
Operations and training of personnel	96	1	0
Cleanliness of facilities, surfaces and equipment	175	0	0
Maintenance of facilities and equipment	78	0	0
Compliance with the approval requirements	84	0	0

In egg sector establishments in 2018, the control was focused on monitoring the cleanliness of the facilities, surfaces and equipment (175 inspections), the monitoring of the production hygiene of food products (138 inspections) and the sales requirements of eggs (113 inspections).

The special requirements for food production and the reception of animals and information on animals were the least frequently inspected items (3 and 5 inspections, respectively).

In egg sector establishments, a rating of requires improvement or C was given on the operations and training of the personnel (the percentage of C ratings was 1.0% of 96 inspections). The rating poor or D was given in traceability and recalls (the percentage of D ratings was 2.1% of 48 inspections) and in the sales requirements (the percentage of D ratings was 0.9% of 113 inspections). Only a small amount of information provided on foods was controlled (Table 17).

5.4 Other food premises

The number of registered food premises subject to food control that produce or package food products is presented in Figure 19.

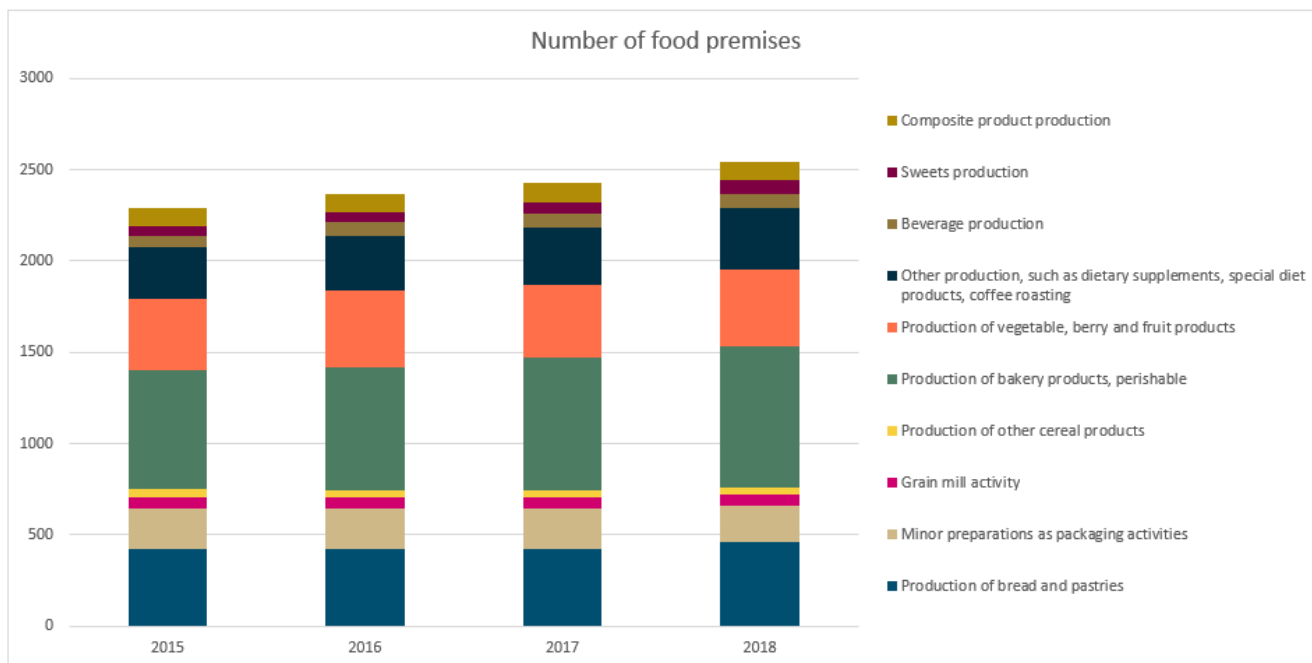


Figure 19. Number of registered food premises in 2015–2018

Table 18. Food production sites, inspections and sanctions in 2018

Food premises	Sites			Inspections		Sanctions	Inspections that resulted in taking coercive measures
	Total	Inspected sites		Planned inspections, incl. follow-up inspections	Other than planned inspections	Inspections that resulted in a notice	
		number	number				
Cereal and vegetable sector	1957	754	36	838	90	99	8
- Grain mill activity	63	26	41	25	1	0	0
- Production of perishable bakery products	775	347	45	398	44	55	3
- Production of bread and pastries	460	180	39	198	22	29	2
- Production of other cereal products	38	14	37	14	0	0	0
- Production of plant, berry and fruit products	423	148	35	173	19	13	3
- Minor preparations as packaging activities	198	39	20	30	4	2	0
Composite product production	100	50	50	66	7	4	0
Sweets production	73	29	40	30	8	2	0
Beverage production	76	28	37	35	4	3	2
Other production, such as dietary supplements, special diet products, coffee roasting	336	110	33	115	15	14	0

Slightly over one third (36%) of the food premises in the **cereal and vegetable sector** were inspected according to plan. In the case of premises that manufacture perishable bakery products, nearly half (45%) of the premises were inspected. The majority of the inspections of the food premises in the cereal and vegetable sector were planned (838 inspections); only

90 inspections were other than planned. 99 inspections led to a notice and 8 inspections to administrative coercive measures.

Half (50%) of the sites that produce **composite products** were inspected. The majority of the inspections (66 cases) were planned (with seven other than planned inspections), and four inspections resulted in a notice.

Less than half (40%) of the food premises that produce **sweets** were inspected. 30 of the inspections were planned, and eight inspections were other than planned inspections. Two inspections resulted in a notice.

Less than half (37%) of the sites that produce **beverages** were inspected. 35 of the inspections were planned, and four inspections were other than planned inspections. Three inspections resulted in a notice and two to taking administrative coercive measures.

One in three (33%) sites involved in **other production** were inspected; the majority of the inspections (115) were planned, 15 other than planned. The category of other production includes sites that produce dietary supplements and special diet products, for example (Table 19).

Table 19. Results of food production inspections in 2018

Food premises	Inspections	Results			
	Planned inspections, incl. follow-up inspections	Inspection-specific results			
	number	A, %	B, %	C, %	D, %
Cereal and vegetable sector	838	40,5	46,9	12	0,5
- Grain mill activity	25	54,2	45,8	-	-
- Production of perishable bakery products	398	34,5	51,8	12,9	0,8
- Production of bread and pastries	198	42,5	41,4	16	-
- Production of other cereal products	14	78,6	21,4	-	-
- Production of vegetable, berry and fruit products	173	42,4	47,3	9,7	0,6
- Minor preparations as packaging activities	30	65,4	30,8	3,8	-
Composite product production	66	67,7	24,2	8,1	-
Sweets production	30	65,5	27,6	6,9	-
Beverage production	35	66,7	23,3	6,7	3,3
Other production* (such as dietary supplements, special diet products, coffee roasting)	115	51,5	35	12,6	1

In the Oiva inspections of the operators in the **cereal and vegetable sector**, 87% of sites received an excellent or good (A or B) result, and about 13% were rated as requiring improvement or poor (C or D).

92% of the sites that produce **composite products** received an excellent or good result, and 8% of the sites were rated as requiring improvement. None of the sites was rated as poor.

In **sweets production**, 93% of the sites were rated as excellent or good, and 7% were rated as requiring improvement.

90% of the inspected companies that produce **beverages** achieved an excellent or good result. In 7% of the sites improvement was required, and 3% of the sites were rated as poor.

In **other production**, about 87% of the sites were rated as excellent or good, 13% were rated as requiring improvement and 1%, poor.

Table 20. The distribution of the requirement-specific planned inspections and follow-up inspections of food production in 2018

Food premises	Planned inspections						Follow-up inspections					
	Inspections	Distribution of results concerning the requirements imposed on food premises				Follow-up inspections required	Follow-up inspections conducted	Distribution of results concerning the requirements imposed on food premises				
		%	A	B	C			D	%	A	B	C
	number					number	number					
Cereal and vegetable sector	1203	87,0	10,7	2,2	0,1	102	79	62,4	24,1	12,6	0,9	
- Grain mill activity	26	94,7	5,3	-	-	0	-	-	-	-	-	
- Production of perishable bakery products	442	84,4	13,2	2,4	0,1	53	50	57,1	24,6	17,0	1,3	
- Production of bread and pastries	214	86,8	9,5	3,7	-	30	16	80,5	15,4	14,1	-	
- Production of other cereal products	14	98,5	1,5	-	-	0	0	-	-	-	-	
- Production of vegetable, berry and fruit products	192	89	9,7	1,2	0,1	18	13	60,2	34,9	4,8	-	
- Minor preparations as packaging activities	34	96,3	3,5	0,2	-	1	0	-	-	-	-	
Composite product production	74	92,5	5,6	2,0	-	5	4	75,0	6,3	18,8	-	
Sweets production	38	94,0	5,5	0,4	-	2	3	70,8	25,0	4,2	-	
Beverage production	39	93,6	4,8	1,0	0,6	4	6	65,9	18,2	11,4	4,5	
Other production (such as dietary supplements, special diet products, coffee roasting)	130	91,0	6,7	2,2	0,1	15	11	61,3	14,7	22,7	1,3	

In the **cereal and vegetable sector**, 102 follow-up inspections were required, 79 of which were conducted. Some of the follow-up inspections for inspections carried out towards the end of the year may not have been conducted until the following year. After these follow-up inspections, 86.5% of the inspected items received an item-specific rating of excellent or good, whereas 13.5% were still rated as requiring improvement or poor.

In the case of **composite products**, five follow-up inspections were needed, four of which were conducted. The inspected items received excellent and good ratings in 81.3% and required improvement in 18.8% of the cases.

In **sites that produce sweets**, three follow-up inspections were conducted although two follow-up inspections would have been needed. In the follow-up inspections of companies that **produce sweets**, 95.8 per cent of the inspections resulted in item-specific A or B ratings, and improvement was required in 4.5% of the inspections.

In the case of companies that **produce beverages**, four follow-up inspections were needed but as many as six were conducted. In the follow-up inspections, 84.1% of the inspections resulted in item-specific ratings of excellent or good, and 15.9% in requires improvement or poor.

In the case of sites involved in **other production**, 11 follow-up inspections were carried out although 15 were needed. After the follow-up inspections in these sites, 76% of the inspected items were rated excellent or good, and 24% received the rating of requires improvement or poor (Table 20).

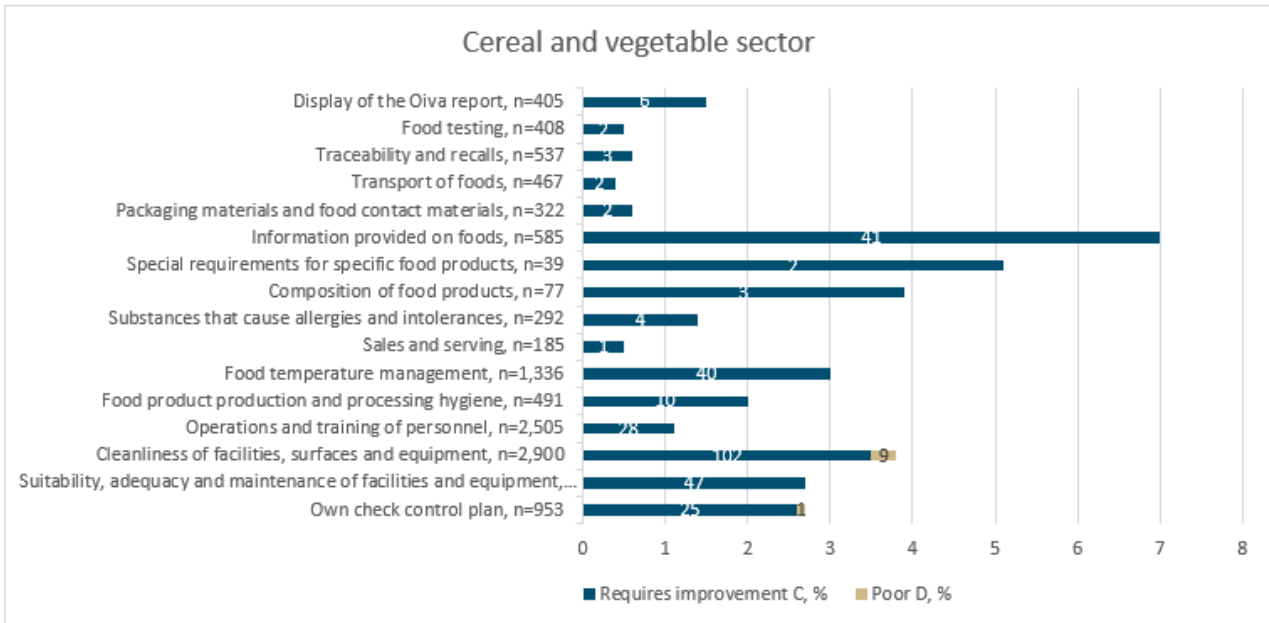


Figure 20. The requires improvement (C) and poor (D) ratings (number and %) concerning the requirements imposed on cereal and vegetable sector operations; n = the number of inspections regarding the requirement in question

The inspections carried out show that legislation is well complied with in the cereal and vegetable sector. In relative terms, the highest amount of shortcomings was detected in the information provided on food products (41 C ratings, 7% of inspections), food-specific special requirements (2 C ratings, 5.1% of inspections), composition of food products (3 C ratings, 3.9% of inspections) and cleanliness of the facilities, surfaces and equipment (102 C ratings, 3.5% of inspections, and 9 D ratings, 0.3% of inspections) (Figure 20).

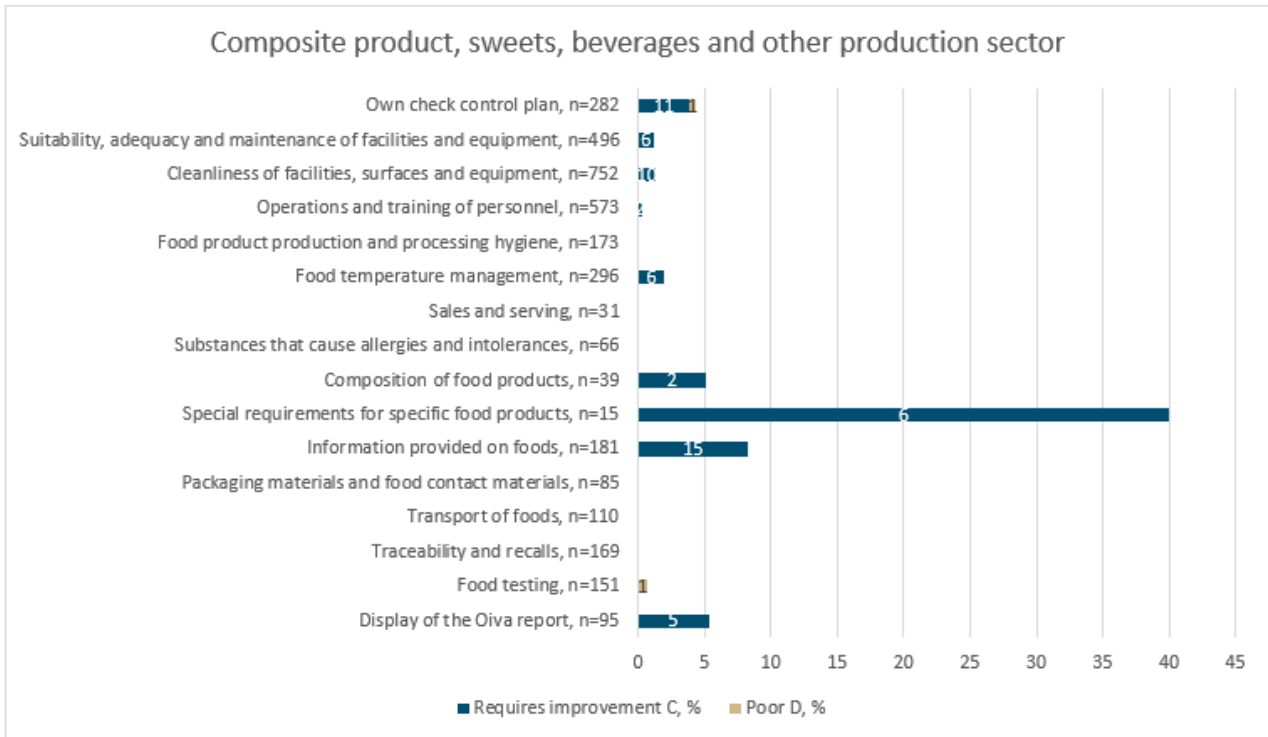


Figure 21. The requires improvement and poor ratings (number and %) concerning the requirements imposed on composite products, sweets and beverage production and other production, such as dietary supplements, special diet products and coffee roasting; n = the number of inspections regarding the requirement in question

According to the inspections carried out, the facilities, equipment, conditions and operations of personnel in the production of composite products, sweets and beverages as well as in sites involved in other production (such as dietary supplements, foods intended for special groups and coffee roasting) seem to be at a very good level. The shortcomings detected in these items were sporadic. In relative terms, shortcomings were most frequently detected in food-specific special requirements (6 C ratings, 40% of inspections), information provided on food products (15 C ratings, 8.3% of inspections) and composition of food products (2 C ratings, 5.1% of inspections) (Figure 21).

5.5 Organic production

The control of organic production was implemented according to plan, and the targeted efficacy – ensuring the reliability of the labelling as organic – was achieved. Over 98% of the operators that had signed up in the control system complied with the requirements imposed on the production. The results of the market surveillance in retail sales indicate that consumers can rely on the validity of the labelling of organic products.

Table 21. The number of inspected operators in organic production in 2016 to 2018

Operators, number	2016	2017	2018
Organic primary production	4 356	4509	4 988
Organic food operators	697	742	749
Organic feed operators	47	45	44
Organic seed packing centres	25	25	28
Organic alcohol sector operators	116	116	125

In market surveillance, the use and authenticity of statements regarding organic production are inspected. During the inspection, organic labelling and whether the supplier is registered in the control system are controlled. Packed products and those intended for loose sales are included in the inspection. The main objective is to make sure that consumers are not misled. Municipal food inspectors conducted a total of 161 inspections to monitor the sale of organic products according to the Oiva instructions (Table 22). The results of the market surveillance in retail sales indicate that consumers can rely on the authenticity of the labelling of organic products.

Table 22. Inspections in market surveillance that resulted in recording an observation regarding the presentation of organic produce in 2016 to 2018

Inspections	2016	2017	2018
Inspections, number	165	209	161
retailers	146		82
serving establishments	14		62
others	7		17

The authorities record the results of the inspections on a scale from A through B and C to D, and when necessary, conducts a follow-up inspection to ensure that corrective measures are taken. The scale reads as follows: A: The operations meet the requirements. B: There are minor issues with the operations, but these do not mislead consumers. C: There are issues with the operations that mislead consumers. These issues must be rectified in due time; and D: There are issues with the operations that seriously mislead consumers, or the operator has not followed the orders issued. These issues must be rectified without delay.

92.5% of the inspected operators had observed the regulations on organic production in their operations. Ten operators (6.2%) received guidance and instructions from the controller due to detected shortcomings (Table 23). The most frequently detected shortcoming concerned the acquisition of products and the failure to verify if the supplier was recorded in the organic control system. In two inspections (1.2%) the operations were found to be misleading.

Table 23. The results of market surveillance inspections in 2016–2018

Results on scale		Corrective measure	Percentage (%) of inspected		
			2016	2017	2018
A	All requirements complied	No measures	95	93	92,5
B	Minor shortcoming	Guidance and instruction	5	7	6,2
C	Misleading operation	A notice requiring correction within a set time limit	0	0,5	1,2
D	Seriously misleading operation	Coercive measure or prohibition, issue must be rectified immediately	0	0	0

Control report on organic production in 2018 (in Finnish):

<https://www.ruokavirasto.fi/tietoa-meista/julkaisut/raportit-ja-selvitykset/>

5.6 Alcoholic beverages

Figure 22 presents the number of production and wholesale sites of alcoholic beverages in 2013–2018.

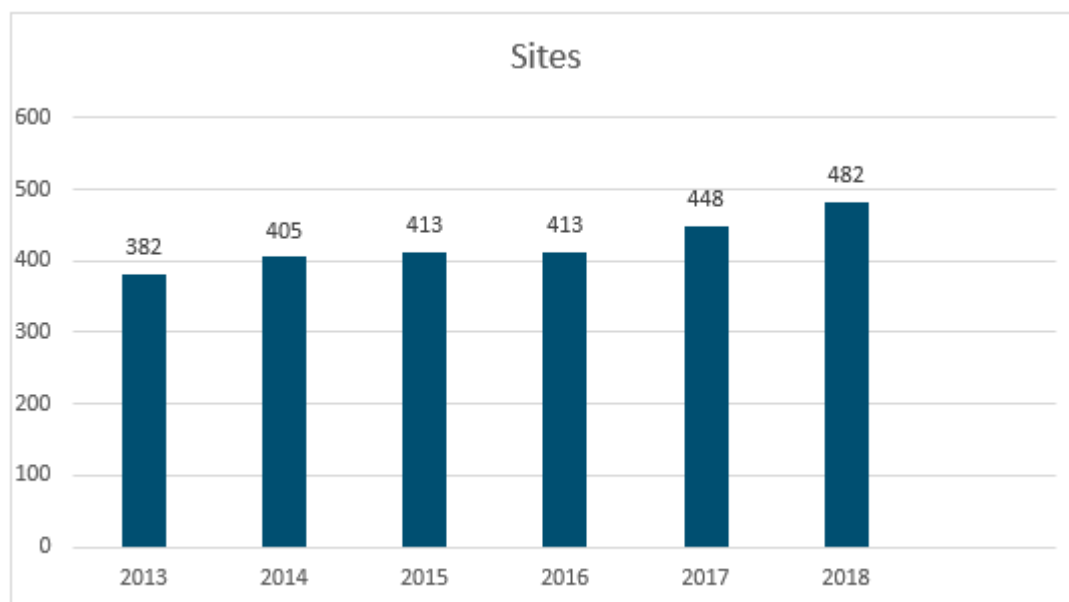


Figure 22. Alcoholic beverage production and wholesale sites in 2013–2018

The number of controlled production and wholesale sites of alcoholic beverages, the inspections conducted and sanctions imposed are presented in Table 24.

Table 24. Alcoholic beverage production and wholesale sites, inspections and sanctions in 2018

	Sites			Inspections		Sanctions	
	Total number	Inspected sites		Planned inspections, incl. follow-up inspections number	Other than planned inspections number	Sites where inspections led to a notice number	Inspections that resulted in taking coercive measures number
		number	%				
Production and wholesale of alcoholic beverages	482	105	22	112	0	14	14

The shortcomings detected in the inspections of the producers of alcoholic beverages mostly concerned their own check control plans and records, and in the case of products, errors in labelling, discrepancies in the alcoholic content. The most common shortcomings in the case of wholesale dealers were detected in the obligatory information on the labelling required in the legislation.

In addition to the labelling, shortcomings were detected in the indication of the alcoholic content. In some products, the alcoholic content determined in an analysis was outside of the tolerance defined in the legislation for the alcoholic content indicated in the labelling. The National Supervisory Authority for Welfare and Health (Valvira) has drafted instructions on the labelling of alcoholic beverages. The instructions were updated in 2018. The inspections continue to aim to ensure that wholesale dealers have described the measures for making sure that the obligatory labelling complies with the legislative requirements in their own check control plans.

In accordance with the Finnish Alcohol Act, discrepancies in the markings of the alcoholic content of alcoholic beverages result in administrative coercive measures. Labelling is also covered in the inspections and the instructions are targeted at the operator in question. Going forward, attention will also be paid in the sufficiently detailed description of the factors that concern quality control and the analysis of the alcoholic content in the own check control plan.

5.7 Contact materials

In 2018, the total number of control sites registered primarily as operators in the contact material sector was 428 (primary sites). Figure 23 indicates the numbers of these operators that are involved in manufacturing, import, export to countries outside of Finland or marketing and distribution. Several sites are involved in various operations, resulting in the total number of operators in the figure deviating from the number of sites (428). Again, the number of control sites has increased slightly in comparison to the previous year. The majority of the registered control sites in the contact material sector are located in Southern, Western and Inner Finland (354 sites that operate in the contact material sector).

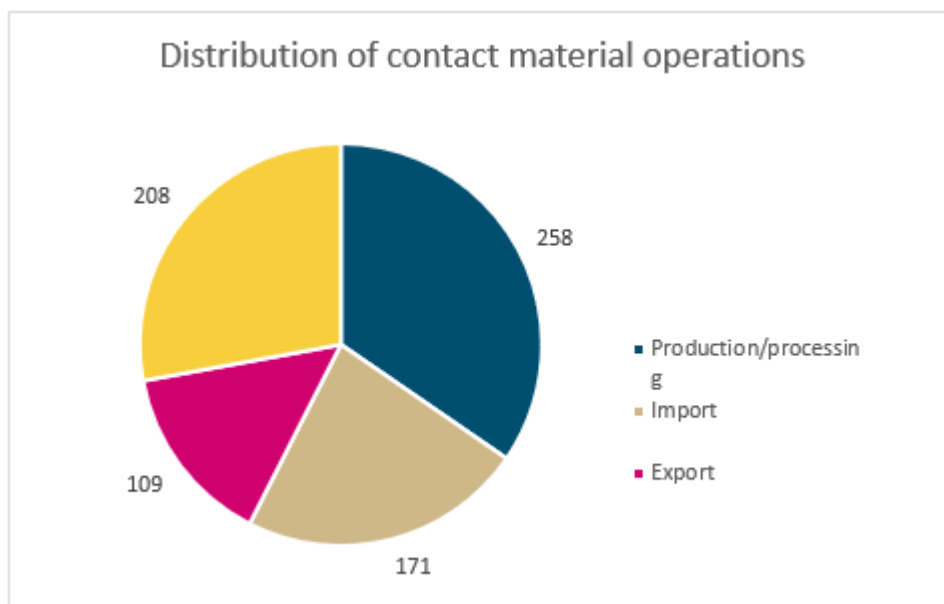


Figure 23. The distribution of the operations in contact material sites

The inspections conducted in inspection sites within the contact material sector in 2018 are summarised in Table 25.

Table 25. Inspections of sites within the food product contact material sector in 2018

Control sites	Sectors	Inspected sites		Inspections	Inspection-specific results					Inspections that led to a notice	Sites in which coercive measures were taken
		number	%		A %	B %	C %	D %			
428	862	105	24,5	115	76	20	5	0	11	0	

Of the contact material control sites, 109 were inspected, which represents 25% of the primary contact material control sites. The percentage of inspected control sites was higher than during the previous year when only 11.5% of the sites were inspected. Nonetheless, the targeted numbers of inspections were still not met. The objective is to inspect 33% of the sites per year, leading to each site being inspected at least once every three years. A total of 115 inspections were conducted in contact material control sites, which is also significantly more than during the previous year when the number of inspections conducted was 69. Municipal controllers have participated actively in the meetings and training of the contact material control network of the Finnish Food Authority, which is likely to be a cause for the increase in the number of inspections.

However, the inspections are distributed unevenly between regions and control units. In Southern Finland, where the number of control sites in the contact material sector is the highest (215 primary controls sites), 67 inspections (covering 31% of the contact material sites in the region) were conducted. In Western and Inner Finland, 22% of the sites (21 of 95 sites) were inspected, in Southwest Finland 8% (5 of 62 sites), in Eastern Finland, 21% (6 of 29 sites) and in Northern Finland, 13% (2 of 15 sites). In Lapland, 3 inspections were conducted, which covers 25% of the primary contact material sites in the area (10 sites).

A total of 26 control units still did not conduct any inspections in the contact material sector. This is three control units fewer than in 2017 and seven control units fewer than in 2016. There are a total of 110 operators in the contact material sector in the control units where inspections were not conducted at all in 2018, which is 26% of all the control sites that are primarily registered as operators in the contact material sector (428 in total).

There are 18 control units with ten or more control sites in the contact material sector. Within them, there are a total of 297 primary control sites (69%) in the contact material sector. In these control units, 70 inspections were conducted (24% of the control sites and 61% of all inspections in the contact material sector). Three control units with over ten contact material control sites did not conduct any inspections in 2018.

The four most frequently inspected sectors were contact material companies handling paper and cardboard (41 inspections), plastic sector companies (31 inspections), metal sector companies (10 inspections) and ceramics companies (8 inspections). Out of these companies, the highest number of C ratings were given to metal sector companies (9.1% of the ratings awarded), the second highest to plastic sector companies (4.5% of the ratings awarded), and the third highest to companies that handle paper and cardboard (3.7% of the ratings awarded). D ratings were not awarded at all, and coercive measures were not required in any of the sites.

The EU regulation 2023/2006 stipulates that contact material operators must have a quality management system in place that they follow in their own operations. The implementation of this regulation is inspected as a whole, and separately in terms of seven items. Figure 24 includes the total numbers of inspections per item and the number and distribution of the requires improvement or C ratings.

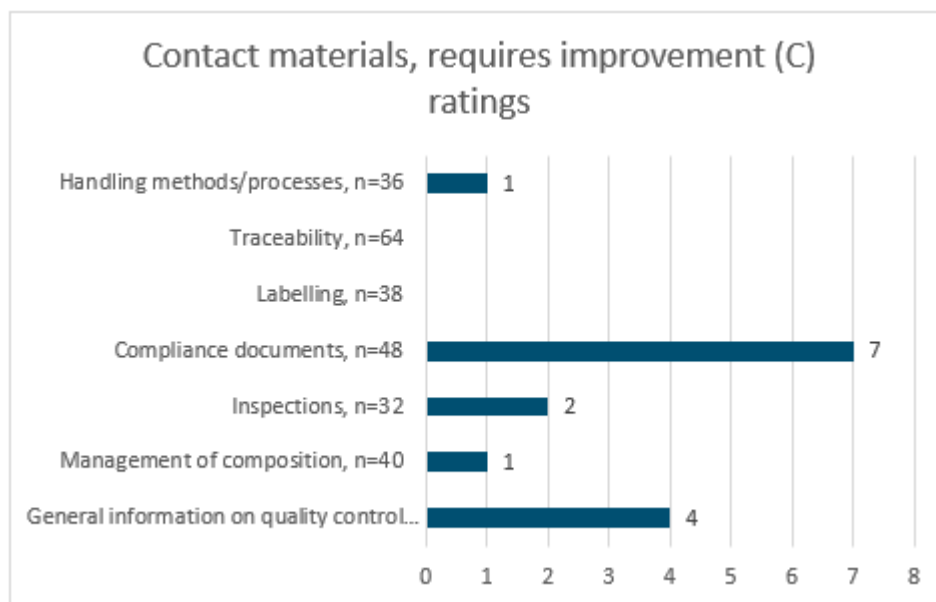


Figure 24. The requires improvement ratings (number) concerning the requirements imposed on contact material sector operators; n = the number of inspections regarding the requirement in question

While the number of inspections did not meet the target, the distribution of shortcomings between different items is clearly visible in Figure 24. This also reflects the overall picture that the control of the inspections has painted of the situation. Traceability is usually at an excellent level in contact material sites where internal traceability is often required by customers as well. There are often shortcomings in the quality management system referred to in the GMP regulation, and they reflect the shortcomings also found in other inspected items. While the operators in the contact material sector often follow other quality systems (such as ISO 9001 or ISO 14000), they often do not address the functions that focus on food safety, save for traceability. Many small and medium-sized operators in the contact material sector are still partly unaware of the legislation that applies to contact materials and the requirements it imposes on contact materials.

As is evident in the figure, the most significant shortcomings were found in the contents of the declarations of conformity. In addition to shortcomings in the contents, the compliance documents could not always be matched with each other, which in turn compromises their reliability. In the control of the inspections, the importance of controlling the compliance documents was highlighted, and it will require even more focus in the future. The controllers were encouraged to co-operation between different control units because this is the only way to improve the quality of the contents of the compliance documents. It is of utmost importance to follow through with the controls and to contact the control unit of the manufacturer or importer when inadequate compliance documents are detected in the controls of wholesale dealers or in food premises, for example. Another focus area for the future is the monitoring of the manufacturing processes, which also requires guidance from the Finnish Food Authority. The conditions present during the manufacturing process affect the safety of the finished product greatly, and the controllers should learn to identify material-specific risk factors in the manufacturing process.

5.8 Food product transportation

Table 26. *Controlled sites, inspections and sanctions within food product transportation*

Transportation	Sites			Inspections		Sanctions	
	Total	Inspected sites		Planned inspections, incl. follow-up inspections	Other than planned inspections	Inspections that resulted in a notice	Inspections that resulted in taking coercive measures
	number	number	%	number	number	number	number
Food product transportation, total *	1303	172	13	169	11	4	0
transportation	673	75	11	74	5	2	0
cool transportation	428	72	17	70	6	2	0
hot transportation	87	5	6	5	0	0	0
frozen goods transport	115	20	17	20	0	0	0
Transportation and distribution of alcoholic beverages	332	15	5	15	0	4	0

* excl. distribution or transport of alcoholic beverages

As indicated in Table 26, the control still only covers a low percentage of food product transports. The low number of inspections is partly due to the difficulties in reaching the transport equipment. In the case of transports, the receiving parties tend to place high demands on the transportation temperatures. It has been determined that reception policies and own check controls function well in this aspect. The inspections have focused on own check control plans and their sufficiency, the general suitability of the facilities for transport activities and the temperature control in transportation. In addition, attention was paid to the conditions during transport depending on the type of transportation. Some cause for notice was detected in the own check control plans.

Table 27. Inspection-specific results in transport of food

Transportation	Inspections	Results			
	Planned inspections, incl. follow-up inspections	Inspection-specific results			
	number	A, %	B, %	C, %	D, %
Food product transportation	169	88,9	8,6	2,5	0
transportation	74	88,2	8,8	2,9	0
cool transportation	70	88,4	8,7	2,9	0
hot transportation	5	80	20	0	0
frozen goods transport	20	95	5	0	0

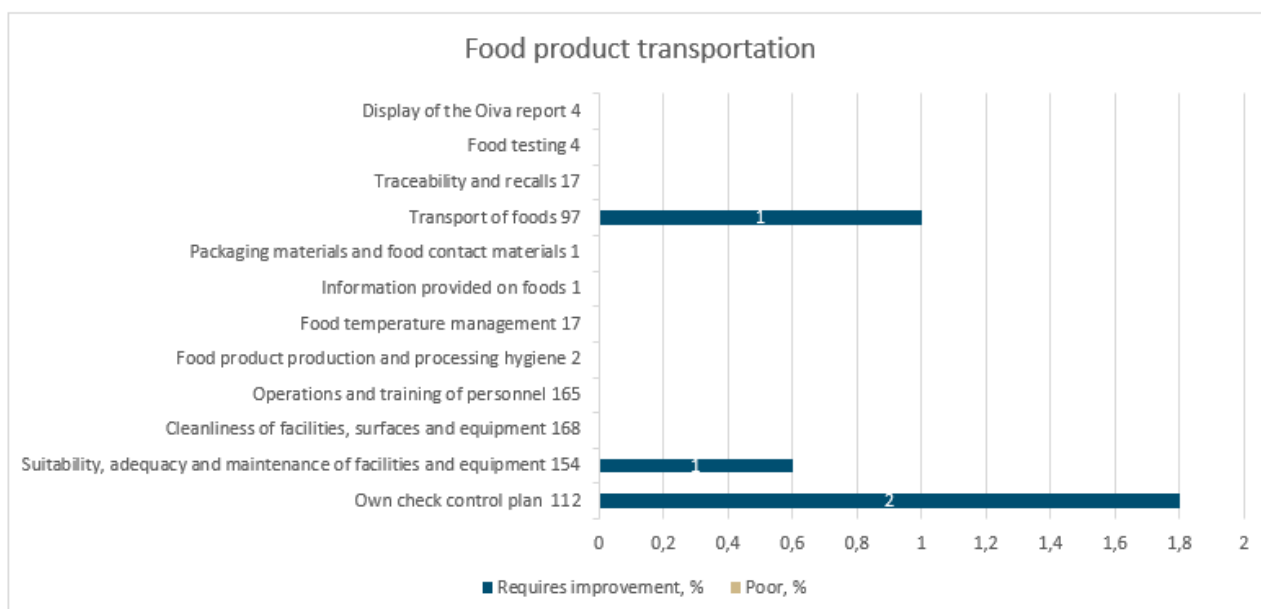


Figure 25. The requires improvement (C) and poor (D) ratings (number and %) concerning the requirements imposed on transport of food; n = the number of inspections regarding the requirement in question

The inspections of international transportations of perishable food products and the necessary special equipment

A total of 63 ATP inspections were conducted in the control units. The number of inspected control sites was 38. Two notices that concern shortcomings in the ATP documentation were given in connection with the inspections. The number of inspections of ATP vehicles was higher than in 2017. Since ATP vehicles are certified and monitored within the certification system, it is not sensible to direct the resources available in food control into monitoring the technical characteristics of the vehicles in a larger scale than is currently done. There are 509 ATP vehicles registered in the municipal control units.

5.9 Food product wholesale selling and storage

Table 28. Controlled sites, inspections and sanctions within wholesale and storage in 2018

Food premises	Sites			Inspections		Sanctions	
	Total	Inspected sites		Planned inspections, incl. follow-up inspections	Other than planned inspections	Inspections that resulted in a notice	Inspections that resulted in taking coercive measures
	number	number	%	number	number	number	number
Food product wholesale selling	508	136	27	140	36	28	0
Food storage and freezing	652	177	27	194	67	26	2
- storage of animal-derived food products	136	62	46	80	37	11	1
- Storage of other food products	473	98	21	96	25	14	1
- food product freezing	15	5	33	6	3	1	0
- food product packaging	28	12	43	12	2	0	0

In comparison to the report regarding 2017, the total number of sites within wholesale, storage and freezing was slightly lower. 27% of the wholesale sites were inspected, and one in five of the inspections were other than planned inspections. The inspections resulted in 28 notices, which is about 30% fewer than in 2017.

Similarly, 27% of sites involved in storage and freezing were inspected. One in four of these inspections were other than planned inspections. The inspections resulted in 26 notices, and administrative coercive measures were taken twice. This is in line with the number of sanctions in 2017.

Table 29. *Inspection-specific results of food product wholesale and storage in 2018*

Food premises	Inspections	Results			
	Planned inspections, incl. follow-up inspections	Inspection-specific results			
	number	A, %	B, %	C, %	D, %
Food product wholesale selling	140	52,2	29,9	17,2	0,7
Food product storage and freezing, totals	194	59,8	26,8	11,2	2,2
- storage of animal-derived food products	80	55,8	29,9	11,7	2,6
- Storage of other food products	96	65,9	21,2	11,8	1,2
- food product freezing	6	50,0	16,7	16,7	16,7
- food product packaging	12	45,5	54,5		

The inspection-specific Oiva rating of excellent or good (A or B) was awarded to 82% and the rating of requires improvement or poor (C or D) to 18% of the wholesale sites (Table 29).

The inspection-specific Oiva result of excellent or good (A or B) was awarded to 87% and the result of requires improvement or poor (C or D) to 13% of sites involved in the storage and freezing of food products.



Figure 26. The requires improvement (C) and poor (D) ratings (number and %) concerning the requirements imposed on the wholesale selling of food products; n = the number of inspections regarding the requirement in question

In the wholesale selling of food products, the highest number of shortcomings (C or D rating) was detected in the composition of food products, information provided on food products and food-specific special requirements when looking at the relative proportions of the ratings (Figure 26). In absolute numbers, the highest number of shortcomings was detected in the information provided on food products (14 notices), which, however, is less than 50% of the sanctions that resulted from these shortcomings in 2017 (information provided on food products in 2017: 30 C ratings and 3 D ratings).

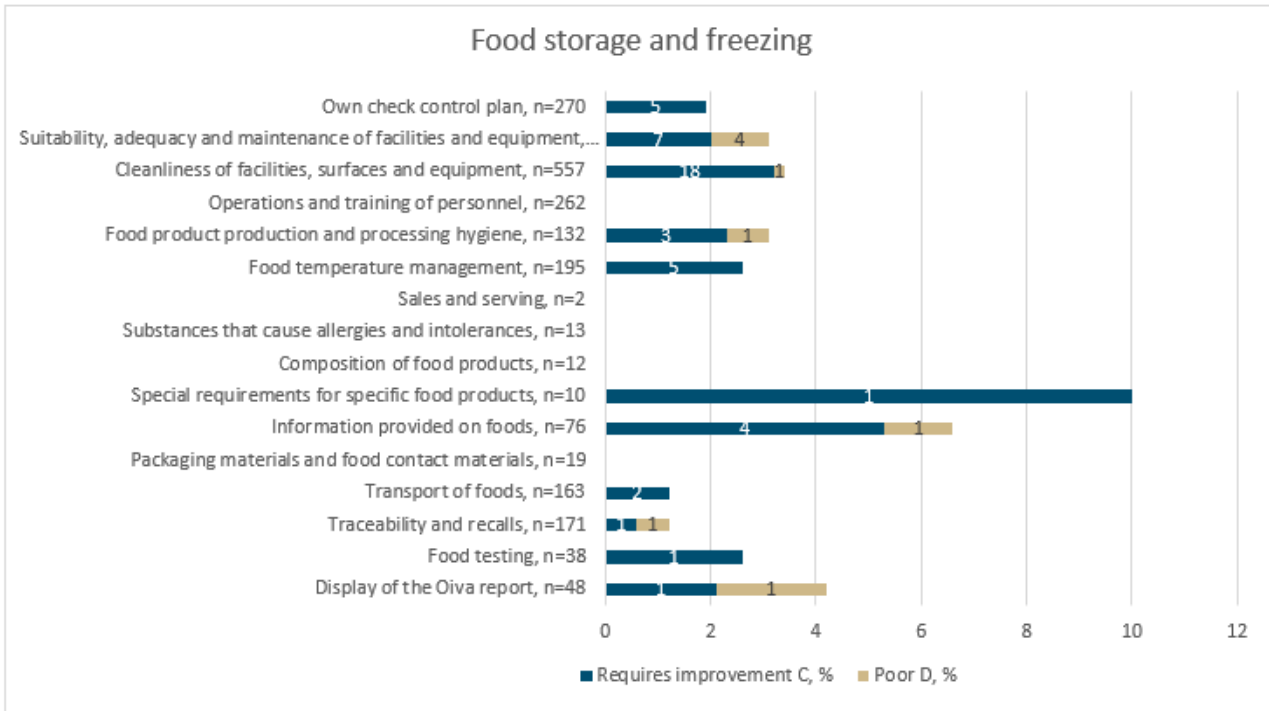


Figure 27. The requires improvement and poor ratings (number and %) concerning the requirements imposed on the storage and freezing of food products; n = the number of inspections regarding the requirement in question

In the storage and freezing of food products, the highest number of shortcomings (C or D rating) was detected in the food-specific special requirements, information provided on food products and the cleanliness of facilities, surfaces and equipment when looking at the relative proportions of the ratings (Figure 27). In absolute numbers, the highest number of shortcomings was detected in the cleanliness of facilities, surfaces and equipment (18 notices and 1 instance of coercive measures), which is more than twice the number of sanctions concerning the same item in 2017.

5.10 Food product retail sale

Table 30. Control sites, inspections and sanctions within retail sales of food products; all inspections in 2018

Food premises	Sites			Inspections		Sanctions	
	Total	Inspected sites		Planned inspections, incl. follow-up inspections	Other than planned inspections	Inspections that resulted in a notice	Inspections that resulted in taking coercive
	number	number	%	number	number	number	number
Food product retail sale	10239	3621	35	3906	540	521	25

There was a total number of 10,239 retail sites, 35% of which were inspected. A total of 521 inspections resulted in notices, and in 25 of them, coercive measures were taken (Table 30).

Table 31. The inspection-specific Oiva results of food product retail sales in 2018

Food premises	Inspections	Results			
	Planned inspections, incl. follow-up inspections	Inspection-specific results			
	number	A, %	B, %	C, %	D, %
Food product retail sale	3906	47	38,4	13,1	1,5

The rating of excellent or good (A or B) was awarded to retail sites in about 85%, and the rating of requires improvement or poor (C or D) in about 15% of the inspections (Table 31).

Table 32. The distribution of the requirement-specific ratings given in planned inspections and their follow-up inspections of retail sales of food products and food service in 2018

Food premises	Planned inspections					Follow-up inspections					
	Inspections	Distribution of results concerning the requirements imposed on food premises				Follow-up inspections required	Follow-up inspections conducted	Distribution of results concerning the requirements imposed on food premises			
		number	A, %	B, %	C, %			D, %	number	number	A, %
Retail sales	445	88,7	8,8	2,3	0,3	604	455	68,4	21,1	8,1	2,4
Serving	17189	88,1	9,7	2,2	0,1	2095	1643	73	20,3	6,2	0,6

Out of the planned inspections of retail sites, 97.5% of the item-specific ratings were excellent (A) or good (B), and 2.5% required improvement (C) or were poor (D).

The required number of follow-up inspections of retail sites was 604, but only 455 (75%) of them were conducted. It is possible that some of the follow-up inspections were combined with the subsequent planned inspections and others were postponed until the following year. After follow-up inspections, 89.5% of the ratings of the different items were excellent or good. The percentage of requires improvement or poor ratings in the follow-up inspections was 10.5%. It is possible that other shortcomings were detected during the follow-up inspections, which may have led to the results not improving.

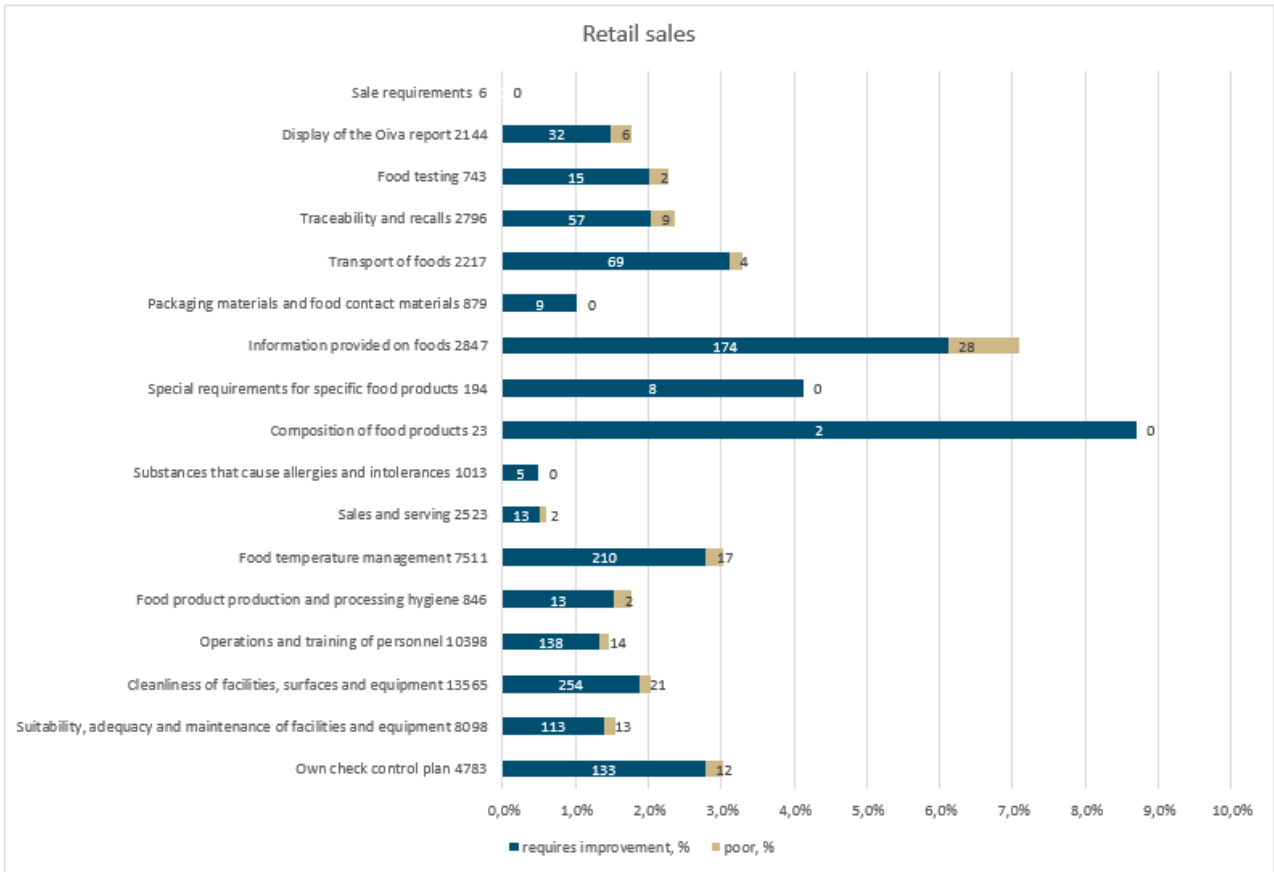


Figure 28. The requires improvement and poor ratings (number and %) concerning the requirements imposed on retail sales; n = the number of inspections regarding the requirement in question in 2018

In the retail sales of food products, the requirements were mostly complied with or the shortcomings detected were minor. Over 96% of the item-specific results were excellent or good. In the case of information provided on food products, the percentage of item-specific good and excellent ratings was 93%. The percentage of excellent and good results in the composition of food products was 91%. However, this item was only inspected 23 times due to the scarcity of operations related to this item in retail sales.

In the retail sales of food products, the highest number of shortcomings (ratings as requiring improvement or poor) in relation to the item was detected in the information provided on food products and composition of food products, as well as the food-specific special requirements, matters related to food deliveries, temperature management of food products and own check control plans.

The control sites, inspections and sanctions within low-risk activity involving food products in 2018 are presented in Tables 33 and 34.

Table 33. Control sites, inspections and sanctions within low-risk activities involving food products in 2018

Food premises	Sites			Inspections		Sanctions	
	Total	Inspected sites		Planned inspections, incl. follow-up inspections	Other than planned inspections	Inspections that resulted in a notice	Inspections that resulted in taking coercive
	number	number	%	number	number	number	number
Low-risk activity	152	28	18	29	3	0	0

Table 34. Inspection-specific results of low-risk activities involving food products

Food premises	Inspections	Results			
	Planned inspections, incl. follow-up inspections	Inspection-specific results			
	number	A, %	B, %	C, %	D, %
Low-risk activity	32	47,4	52,6	0	0

Low-risk activity means the handling of animal-derived products according to the national decree 1258/2011. In 2018, 18% of these operators that handle meat were inspected. The inspections were mainly planned (Table 34).

Low-risk activity has complied with the requirements or the shortcomings detected have been minor.

5.11 Food service

The number of serving establishments subject to food control are presented in Figure 29.



Figure 29. The number of municipally controlled serving establishments in 2016–2018

In 2018, the total number of serving establishments was 33,659 (Table 35).

Table 35. Control sites, inspections and sanctions within food service in 2018

	Sites			Inspections		Sanctions	
	Total	Inspected sites		Planned inspections, incl. follow-up inspections	Other than planned inspections	Inspections that resulted in a notice	Inspections that resulted in taking coercive measures
	number	number	%	number	number	number	number
Food service, totals	33659	14682	44	16050	1142	1964	31
- Grill and fast food business	2460	1068	43	1148	120	146	3
- Cafeteria business	5535	1916	35	1976	150	201	3
- Pub business	1799	227	13	186	45	17	1
- Restaurant business	9919	5792	58	6611	608	1250	20
- Institutional catering, central kitchen	2056	1245	61	1543	77	94	2
- Institutional catering, institutional	5192	2398	46	2458	87	114	1
- Institutional catering, kitchens that prepare precooked food products for service	6698	2036	30	2130	55	143	1
Control by the Finnish Defence Forces							
- Institutional catering and field kitchen services	194	94	48	108	7	0	0

Serving establishments are classified in five categories, according to their activities. The percentage of institutional kitchens and restaurants is the highest (Figure 29 and Table 35).

In 2018, municipal food control authorities inspected 44% (14,682) of all serving establishments (33,659). The majority (93% or 16,050 cases) of the inspections were planned inspections (incl. follow-up inspections). 1,964 inspections resulted in a notice and 31 inspections led to coercive measures.

In relative terms, the most frequently inspected serving establishments were institutional kitchens (central kitchen operations and institutional kitchens) and restaurants, as well as grills and fast food restaurants; the least frequently inspected serving establishments were pubs. Other than planned inspections (7%) usually concerned issues such as consumer reclamations, suspected food poisonings and other suspicions. Joint inspections carried out by two inspectors may be recorded as other than planned inspections in the case of the second inspector. The results indicate that in general, serving establishments, particularly institutional kitchens, are well maintained: the number of notices and coercive measures was low. The majority of notices and coercive measures concerned the restaurant business (Table 35).

The total number of planned inspections (incl. follow-up inspections) in the sites involved in the serving of food products in 2018 was 16,050 (Table 36).

The overall Oiva rating of excellent or good (A or B) was awarded to 87% and the rating of requires improvement or poor (C or D) to 13% of the serving establishments (Table 36). In the case of serving establishments, hardly any poor ratings were given. A closer look at serving establishments reveals that, regardless of the type of operations, industrial catering sites are all at the same level of quality and achieved better Oiva results than other operations. About 94% of the Oiva results of industrial catering sites were excellent or good, and about 6% required improvement or were poor.

Though the required number of follow-up inspections was 2,095, only 1,643 of them were carried out. It is possible that some of the follow-up inspections were combined with the subsequent planned inspections and others were postponed until the following year. In the item-specific inspections, 98% of the ratings were excellent (A) or good (B). After follow-up inspections, 93% of the ratings were excellent or good. The percentage of requires improvement or poor ratings was 7% (Table 36). In addition, other factors may have been inspected in connection with the follow-up inspections, which may have revealed additional shortcomings.

Table 36. *The inspection-specific Oiva results of food serving operations in 2018*

Food service, totals	Inspections	Results			
	Planned inspections, incl. follow-up inspections	Inspection-specific results			
	number	A, %	B, %	C, %	D, %
	16050	45,3	42,0	12,3	0,4
- Grill and fast food business	1148	42,8	42,7	14,0	0,6
- Cafeteria business	1976	47,8	41,5	10,2	0,4
- Pub business	186	54,1	34,4	10,8	0,6
- Restaurant business	6611	32,5	48,1	18,7	0,6
Institutional catering					
- Central kitchen	1543	59,7	34,5	5,8	0,0
- Institutional kitchen	2458	59,1	35,9	4,8	0,2
- Kitchens that prepare precooked food products for service	2130	56,7	36,4	6,9	0,0

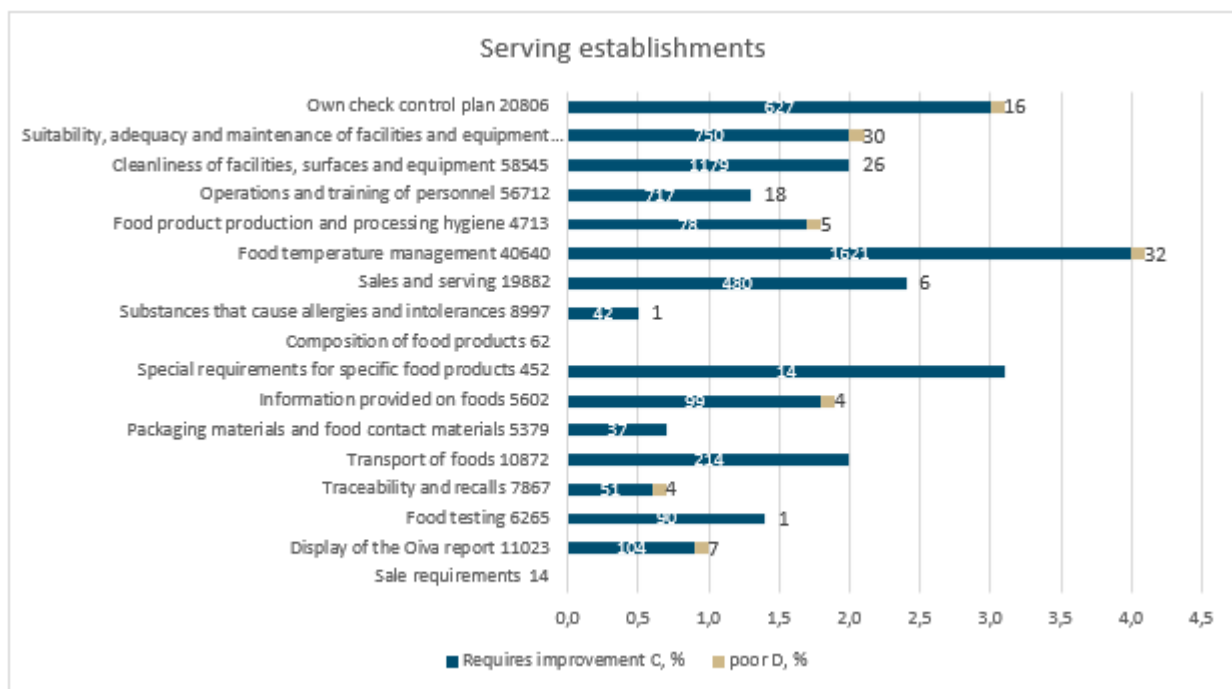


Figure 30. The requires improvement and poor ratings (number and %) concerning the requirements imposed on serving establishments; n = the number of inspections regarding the requirement in question in 2018

In serving establishments, the requirements were mostly complied with or the shortcomings detected were minor; over 95% of the item-specific results were excellent or good.

In relative terms, the highest number of shortcomings (requires improvement or poor results) was detected in the item related to the temperature management of food products (1,653 cases, or 4.1%) and the maintenance of the own check control plan (643 ratings requiring improvement or poor, 3.1%). Shortcomings (requires improvement or poor results) in the cleanliness of facilities, equipment and surfaces was detected in 1,025 inspections (2.0%). Temperature management during service is inspected in the item concerning sales and serving. A total of 486 (2.4%) inspections revealed shortcomings in the temperature management in connection with serving food.

Upon closer inspection, the shortcomings that concern temperature management are related to the storage temperatures of food products, storage conditions, inadequate protection of food products during storage, times of usage, temperature monitoring and records, as well as inadequate cooling and the temperature of food products when served.

Food control by the Finnish Defence Forces

The objectives set for the food control by the Finnish Defence Forces in 2018 were met fairly well. Based on the risks, control was increasingly focused on field kitchen services in connection with field practices and vessel kitchen services of the Finnish Navy where shortcomings have been detected and where enhanced control and the instruction of the operators are clearly required. It was found that the effectiveness of the inspections of the field kitchen services increased if the control and controller were visible in the field and if it was possible to go through the feedback on site in collaboration with the military instructors.

On the other hand, the effectiveness of the inspections seemed to decrease if the completion and delivery of the inspection record to the site was deferred. Targeting of the control operations has worked well, and it should be further prioritised in the future. Flexible targeting according to the availability of inspection resources was widely utilised during the year.

Food control by the Finnish Defence Forces in general was completed fairly well. 64% of the planned inspections were conducted, and they covered 49% of the sites.

The majority of the shortcomings detected in the inspections concerned the need for repair of the structures, the cleaning of facilities and equipment or own check controls and shortcomings in recording it. In the case of field and vessel kitchen services, shortcomings were most commonly detected in own check control records, the implementation of own check controls, food storage temperature and allergen management, as well as in general hygiene and the structural organisation that concern it (such as hand wash stations). In nearly all sites, minor shortcomings were detected in the own check control procedures, such as missing temperature recordings and sampling for monitoring cleanliness not taken according to the procedure described in own check control plans. In military restaurants due to be renovated, the impracticality of the facilities and lack of space, worn-out surfaces and equipment hinder hygienic work procedures. In field kitchen services, the skills of instructors directly affected the motivation and work hygiene of catering teams.

Resources were focused fairly efficiently in the areas of responsibility of the Finnish Defence Forces in 2018. A significant amount of time was spent in substitution and recruitment processes and the following onboarding phases in 2018. In 2018, the input of the Finnish Defence Forces in international military exercises affected the availability of human resources in food control activities. There is no need for significant changes in the food control activities in the Finnish Defence Forces in the coming years. Nonetheless, control activities in small, low-risk sites can be reduced, and the effectiveness of the controls increased by focusing the activities in a systematic and focused manner in specific sites and operations selected according to risks. The centralised monitoring of various types of control sites and the implementation of annual control initiatives to improve the efficiency of food control are the means for developing food control in the near future.

6 SALE OF FOOD PRODUCTS

6.1 Products with registered names

The production, marketing and sale of foods within the EU system of protection of names was inspected in 480 sites. The number of inspections increased by 218 in comparison to the previous year. The increase was the result of a control initiative concerning products with registered names. The participation in the initiative was voluntary for the control units. A total of 228 inspections were reported within the initiative, and the majority of them were also registered in the control system.

The majority of the inspections were conducted in serving establishments (cafés, pizzerias, other restaurants), and a smaller number of inspections in sites that produce products with registered names, particularly Karelian pasties (“karjalanpiirakka”). Of the inspected sites,

74% achieved excellent and 22% good results, whereas four per cent of the inspected sites, i.e. 22 sites, received a rating of requires improvement. Shortcomings continued to be detected in the use of the name “feta” in serving establishments. In 89 sites, the ingredient labelled as “feta” in the name or ingredient list of a salad or other food portion was found to be other cheese than feta. The error misleads the consumer. In 11 cases, the operator had already been notified of the issue in connection with earlier inspections, which led to a rating of requires improvement. The controllers offered a lot of guidance in the matter, and there is no room for ambiguity in the interpretation; thus the issue is expected to be rectified with time.

In the case of the production of karjalanpiirakka, 13 of the inspected 15 sites had an incorrect notion of the approved ingredients of the pasties. This caused 11 operators to receive a rating of good and two operators to receive a rating of requires improvement instead of excellent. The deviations from the approved ingredients according to the registration were the use of milk drink, eggs, butter and milk powder. In the food serving sector, ten sites served rice pastries delivered to the site erroneously as “karjalanpiirakka.”

It is estimated that the control initiative has promoted the number of appeals for changes in the registration of the names of “karjalanpiirakka” and “kalakukko” submitted by the producers. They wish for more specific product specifications that would make it easier for producers to follow the requirements on the ingredients and production methods prescribed in the registration.

6.2 Requirements for the sale of vegetables

The conformity to the requirements for the sale of vegetables was inspected in five packing centre inspections that targeted a total of 33 product batches. A total of 25 inspections were carried out at wholesale operators, with a total of 181 fruit and vegetable batch inspections. 47 inspections were conducted in retail shops to check a total of 2,572 fruit and vegetable batches.

The highest number of inspections concerned tomatoes, apples, bell peppers, salads, grapes and pears. In relative terms, the highest proportion of non-compliant batches were found in oranges (25%), satsumas (19%), nectarines (18%), mandarins (15%) and peaches (11%). The most frequently inspected products were vegetables produced in Finland. The following most frequently inspected products were batches of vegetables reported to originate from Spain, the Netherlands, Italy and South Africa. In relative terms, the highest percentage (87%) of batches not in conformity with the standards originated from a country that was not reported, which means that the labelling error, i.e. the lack of the information on the country of origin, caused the non-conformity. In relative terms, the following highest number of non-confirming batches originated from Turkey (50%), Sweden (38%), Peru (16%), Argentina (15%) and Morocco (15%). The most common cause for non-conformity was a labelling error (132 batches). Other common causes leading to non-conformity were deterioration (70 batches), bruising (17 batches) and physiological defects (15 batches).

The number of inspections and inspected batches remained at the same level as during the previous years. The most frequently inspected products and the main errors that caused non-compliance remained unchanged.

6.3 Requirements for the sale of eggs

Production sites

The inspections of production sites are focused on all new poultry farms producing free-range and barn eggs, as well as poultry farms in which changes have been made after the latest inspection. In 2018, nine inspections were conducted (Table 37). Six of the inspections were conducted to measure new barns for the approval of the poultry farms for the production of barn eggs before their commissioning. Three of the inspections conducted in 2018 comprised the inspection of a new free-range poultry farm for the production of free-range eggs. The other free-range poultry farm was inspected twice.

Table 37. Inspections conducted in egg production farms

Inspected sites	Inspections (number)				Evira-registered poultry farms that produce barn eggs, total			
	2015	2016	2017	2018	2015	2016	2017	2018
Poultry farms that produce barn eggs	4	10	5	6	183	186	187	124 *
Free-range poultry farms	0	6	1	3	3	10	10	11

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

Table 38. Inspections conducted in egg production farms

Reason for inspection	Number of inspections			
	2015	2016	2017	2018
New poultry farms that produce barn eggs	3	10	5	6
New free-range poultry farms	2	6	1	3
Inspections of requirements in existing free-range/barn poultry farms	1	0	0	0

Shortcomings were not detected in the inspected poultry farms. The inspections are acceptance inspections for barn or free-range egg production systems required for the sale of eggs according to the legislation. There is no advance information regarding new poultry farms or changes in the type of production in existing poultry farms, thus the number of inspections cannot be influenced in advance.

Egg packing centres

In 2018, there were 68 egg packing centres in Finland. A total of 113 inspections were conducted in them to evaluate compliance with the requirements for sale. Out of the inspections, 36 targeted the quality and weight grading, 40 the stamping and labelling of eggs, and 37 the records the egg packing centres keep regarding the eggs.

90.3% (102 cases) of the inspections of the compliance with the requirements for sale resulted in an A rating (excellent) in egg packing centres. A good, i.e. B rating was awarded in 8.8% (10) of the inspections and 0.9% (1) of the inspections led to a rating of poor, i.e. D. None of the inspections resulted in a rating of requires improvement or C.

The distribution of the ratings of the requirements in the inspections of the compliance with the requirements for sale in an egg packaging centre was as follows: In the case of the quality and weight grading of eggs, 100% of the inspections resulted in an excellent or good (A or B, respectively) rating. In the case of the stamping and labelling of eggs, 100.0% of the inspections resulted in an excellent or good (A or B, respectively) rating. 97.3% of the inspections concerning the records that the egg packing centres keep regarding the eggs resulted in an excellent or good (A or B, respectively) rating, and 2.7% of the inspections resulted in a poor (D) rating (Table 39). None of the inspections regarding the requirements of sale conducted in egg packing centres resulted in a rating of requires improvement (C). One of the inspections resulted in a poor (D) rating. In connection with the inspections concerning the requirements of sale conducted in egg packing centres, guidance and instruction regarding the quality and weight grading was given in connection with one inspection, the stamping and labelling of eggs in eight inspections and the records the egg packing centres keep regarding the eggs in four inspections.

Guidance and instruction were given in the monitoring of the correctness of the weight grading of eggs and in the calibration of scales.

Guidance and instruction were given in the verification of the condition and cleaning of the egg stamping equipment. Some ambiguity and shortcomings were detected in the producer code stamped on eggs. In some cases, the stamps were unclear, and in some of the inspected eggs, the stamps were missing completely. However, the unclarities and shortcomings fell within the tolerances allowed by the law. The tolerance for illegible stamps is 20% per inspected batch. Stamps that are missing partly or completely, are unclear or contain errors are regarded as illegible. It was also detected that the producer code stamped on eggs did not contain the required information. Guidance and instruction were given regarding the best before date. Eggs have a shelf life of 28 days from the date laid or the first day of the period of laying to the best before date. In the case of labelling, shortcomings were also detected in the marking of the size grade, the key to the producer code and the marking of the production method.

In the case of the records that the egg packing centres keep regarding eggs, shortcomings were detected in the information that the packing centre should receive regarding the eggs delivered by producers, the numbers of eggs after classification according the quality and weight grades, the records concerning class B eggs and the weight grading of eggs shipped to

customers. In one of the inspections, it was found that the egg packing centre did not keep any kind of records at all.

Table 39. Inspection-specific results of the compliance of the requirements for sale in egg packing centres

Control of the compliance with the requirements for sale in egg packing centres	Inspections	Results			
	Planned inspections, incl. follow-up inspections	Inspection-specific results			
	number	A, %	B, %	C, %	D, %
Quality and weight grading of eggs	36	100,0	0	0	0
Stamping and labelling of eggs	40	82,5	17,5	0	0
Records that the egg packing centres keep regarding eggs	37	89,2	8,1	0	2,7

6.4 Compliance of olive oils with requirements

Each Member State should verify the correctness and accuracy of the labelling of olive oils and particularly whether the trade description (category of oil) corresponds to the contents of the package.

In Finland, the conformity of olive oils was inspected for the first time in 2018, and the samples consisted of extra virgin olive oils of four different brands marketed in different chains of stores. According to both chemical laboratory analyses and organoleptic assessment, all of the inspected four extra virgin olive oils corresponded to the quality category that they were labelled to be, i.e. extra virgin olive oil. The labelling of the inspected extra virgin olive oils were mostly compliant with the requirements, while the markings indicating the origin of the product could have been clearer in the labelling of one brand.

7 MICROBIOLOGICAL MONITORING PROGRAMMES

7.1 Salmonella in food products

The national salmonella monitoring programme has been included in the own check control programmes of slaughterhouses, low-capacity slaughterhouses and cutting plants. The own check salmonella control was inspected in a total of 47 sites, 11 of which had slight shortcomings in their own checks (rating of B). In three sites, repeated issues were detected in the sampling plan and sample collection (rating of C). Follow-up inspections were conducted in these sites. In one of them, the issue had been rectified (rating of A), in one, sample collection was still lacking (rating of C), and in one, administrative coercive measures were taken (rating of D).

In 2018, samples for the national salmonella monitoring programme were taken in pig and cattle slaughterhouses according to the number of samples required in the sampling plan drafted by Evira (Table 40). In accordance with the legislation and the instructions of the Finnish Food Authority, the required number of samples in low-capacity slaughterhouses and broiler, turkey and chicken slaughterhouses, cutting plants, establishments that produce

minced meat and establishments that produce meat preparations (Tables 41–43) depends on the production volumes.

The national salmonella monitoring programme has been effective and the salmonella status of Finnish meat and eggs has remained good. The number of samples from slaughterhouses and meat sector establishments that contained salmonella remained clearly under the national goal of 1%.

The results of the national salmonella control programme were reported to the EU in the annual report on zoonoses.

Table 40. Samples taken in red meat slaughterhouses and low-capacity slaughterhouses according to the salmonella control programme in 2018

Sample type	Required in the Decree	Actual number of samples	Positive samples, number	Positive samples, %
Lymph node samples				
Slaughter pig	3000	3249	0	0
Sow and boar	3000	3072	2	0,07
Cattle	3000	3136	1	0,03
Surface smear samples from carcasses				
Slaughter pig	3000	3230	0	0
Sow and boar	3000	3119	1	0,03
Cattle	3000	3064	0	0

Table 41. Neck skin samples taken from carcasses in broiler, turkey and chicken slaughterhouses in 2018

Animal species	Samples, number	Positive samples, number	Positive samples, %
Broiler	1213	0	0
Turkey	286	0	0
Chicken	0	0	0

Table 42. Meat samples taken in cutting plants in 2018

Animal species	Samples, number	Positive samples, number	Positive samples, %
Finnish meat			
Slaughter pig	1056	0	0
Sow and boar	99	0	0
Cattle	1512	0	0
Broiler	27	0	0
Turkey	62	0	0
Chicken	0	0	0
Duck	0	0	0
Goose	0	0	0
Guinea fowl	0	0	0
Imported meat			
Slaughter pig	0	0	0
Sow and boar	0	0	0
Cattle	0	0	0
Broiler	0	0	0
Turkey	0	0	0
Chicken	0	0	0
Duck	0	0	0
Goose	0	0	0
Guinea fowl	0	0	0

Table 43. Sampling in establishments that produce minced poultry and raw poultry meat preparations in 2018

Finnish meat	Samples, number	Positive samples,	Positive samples, %
Broiler	803	0	0
Turkey	138	0	0
Chicken	0	0	0

The compliance with the sampling requirements of the control programme regarding samples from live animals is reported in the Control of animal health (Eläinten terveyden valvonta) report.

7.2 Salmonella in feeds

National legislation requires that there are no salmonella bacteria in feed. The presence of salmonella in feed is controlled in both official and own check control of the operators in the sector. In executing official control, Evira takes samples of feed produced in Finland and imported high-risk feeds, and controls the implementation of the own check control of the

operators. In addition, animal-by-product feed for pets is sampled in connection with market control inspections. If necessary, feed samples will also be taken to identify the source of salmonella infections in animal holdings or when there is reason to suspect that a holding has received feed contaminated with salmonella. Feed sector operators have a statutory duty to carry out own check control for salmonella that concerns the production and import, as well as production facilities, storage and transportation.

The total number of salmonella analyses on feeds and feed environment samples conducted within official control in 2018 was 5,193. In import, production and market surveillance, 4,717 salmonella analyses targeted feed materials, 265 mixed feeds and 13 feed additives. In addition, a total of 189 feed samples and feed environment samples for salmonella analyses were collected in the holdings where salmonella had been found and in holdings that were suspected to have received feed contaminated with salmonella as a part of the primary production control. Nine feed environment samples were collected in transport equipment in connection with the inspections of the means of transport. In the case of feed materials, the salmonella analyses were chiefly targeted to imported samples and samples from within internal market area. In the case of mixed feeds and feed additives, on the other hand, the salmonella analyses were mainly targeted to samples from Finnish produce and market surveillance. The percentage of the salmonella analyses of feed materials in the salmonella analyses within the import, production and market surveillance of feeds was 94% (in 2017, 93%, in 2016: 93%, in 2015: 92%).

In connection with the import of feed, a total of 29 batches positive for salmonella were detected either in official control or as a result of own check controls (16 in 2017, 18 in 2016, 5 in 2015). The number of contaminated batches was significantly higher than in the previous years. The operators applied for permission for the treatment of the imported batches found to be positive for salmonella at the Finnish Food Authority. After the treatment, official samples were taken of the batches, and they were approved for use only after they were found to be clean. Operators took new treatment agents into use, and some batches had to be treated several times. One batch of organic rapeseed cake, one batch of organic soy and one batch of poultry meal (PAP) were returned to their countries of origin. The batches that were positive for salmonella accounted for 57.7 million kg of imported feed materials (in 2017, 37.1 million kg, in 2016, 35.6 million kg, in 2015 10.3 million kg).

Salmonella was not found in any feed materials or mixed feeds produced in Finland for food-producing animal species. Salmonella was not found in feed samples taken to identify the source of salmonella infections in animal holdings. Salmonella was not found in feed or feed environment samples taken at animal holdings due to suspected salmonella cases in feed, either. Salmonella was not detected in feed environment samples taken from transport equipment or in samples taken from feed produced from Finnish animal-by-products intended for fur animals. In market surveillance, salmonella was detected in two batches of feed intended for wild birds and in three batches of dried animal-by-product intended for pets. The batches were not approved and they were required to be recalled.

In connection with their own check control samples taken in a factory environment, feed sector operators reported 69 salmonella findings to Evira for processing. Salmonella was not found in mixed feed produced in Finland for food-producing animal species in the own check control of the operators, either.

7.3 Campylobacter monitoring in broiler chicken

During the period from the beginning of June to the end of October, all slaughter batches of broiler chicken are tested for Campylobacter. In other months, the target is based on a calculation that accounts for the rate of incidence of Campylobacter in the country. Whether the targets set out in the programme are met is evaluated based on the numbers of tests carried out, submitted by laboratories.

The Campylobacter control programme is included in the own check control programmes of broiler slaughterhouses. The sampling conducted in each broiler slaughterhouse is inspected by official veterinarians. In 2018, the own check control for Campylobacter was inspected in three poultry slaughterhouses (75% of the sites); two slaughterhouses were rated excellent (A) and one was rated good (B).

In addition to the national Campylobacter control programme, broiler chicken carcasses have also been tested for Campylobacter in broiler slaughterhouses since the beginning of 2018. The new sampling criterion applies to all EU Member States. In Finland, a total of 580 samples were tested, and Campylobacter was only detected in one sample in levels that exceeded the reference point for notification.

Table 44 shows the number of Campylobacter samples taken as a part of the own check control and positive results in broiler slaughterhouses in 2018. The test results obtained in 2018 indicate that the incidence of Campylobacter in broilers has remained low as in previous years, despite the increase in its incidence in comparison to the previous year. Figure 31 indicates the percentage of slaughter batches that were positive for Campylobacters in the total number of inspected slaughter batches during the year in 2012–2018. The results were reported to the EU in the annual report on zoonoses.

Table 44. The number of *Campylobacter* samples taken in own check controls and positive results in broiler slaughterhouses in 2018

Year	Period	Tested slaughter batches, target (number)	Tested slaughter batches, actual (number)	Positive slaughter batches, number	Percentage of positive slaughter batches, %
2018	1.1.–31.5. and 1.11.–31.12.	328	336	0	0
	1.6.–30.10.	All	1742	61	3,5
	Entire year	-	2078	61	2,9

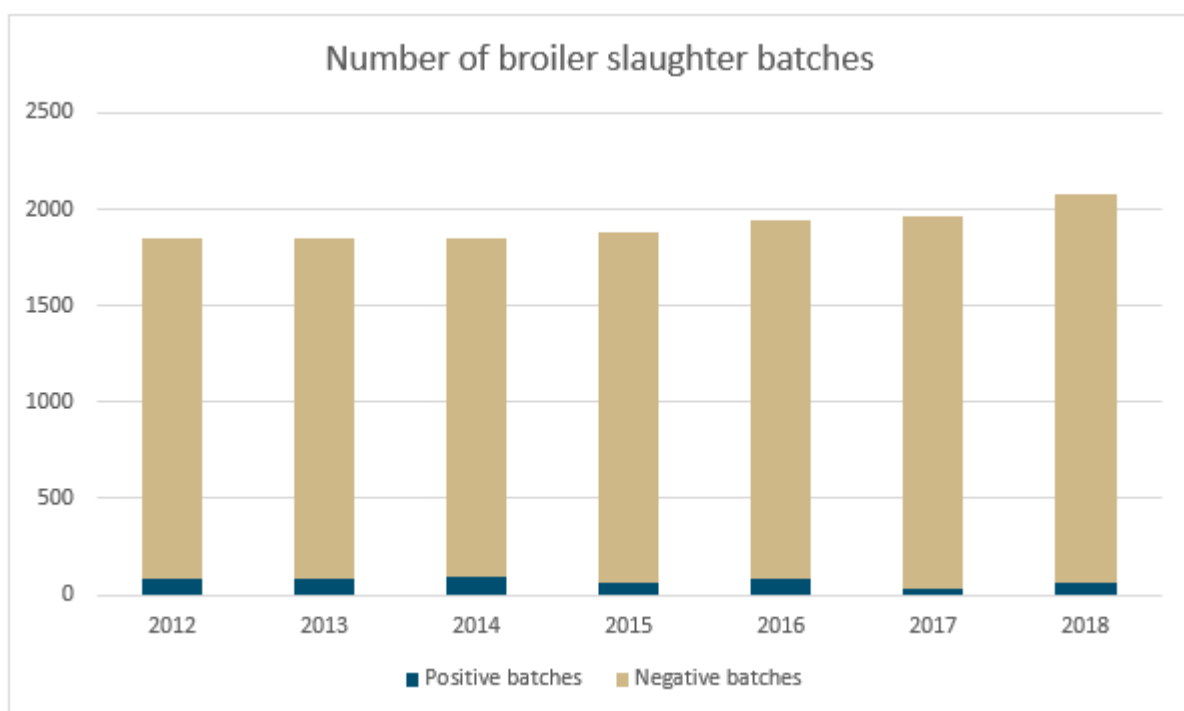


Figure 31. Test results of slaughter batches of broiler (number of batches) in 2012–2018

7.4 EHEC control in cattle

EHEC tests are included in the own check control programmes of cattle slaughterhouses. The slaughterhouse-specific number of samples is determined in the sampling plan drafted by Evira. EHEC tests are included in the own check controls of the low-capacity slaughterhouses in which the number of cattle slaughtered exceeds 100. The own check control for EHEC in cattle slaughterhouses and low-capacity slaughterhouses was inspected in 11 sites (65% of the sites) in 2018. All the inspected sites were rated excellent (A) or good (B). Minor shortcomings concerned sample collection from consecutive animals in the slaughtering order, resulting in sampling not being random.

Table 45 shows the number of tested EHEC own check control samples from cattle slaughterhouses and positive results in 2013–2018. In addition, the table indicates the

number and results of cattle holdings tested in connection with the investigation of EHEC infections in humans in 2013–2018. Both faeces samples and environmental samples were tested in the holdings. In 2018, three of the cattle holdings inspected due to infections in humans were positive.

In cattle slaughterhouses, the EHEC control programme was implemented well, and the percentage of faeces samples positive for EHEC was 2.88% of the actual number of samples taken. The estimate of the implementation is based on the comparison of the target defined in the programme and the number of samples taken, submitted by the official veterinarians of cattle slaughterhouses. In the low-capacity slaughterhouses, the EHEC sampling targets were not completely met according to the requirements of the control programme.

Table 45. Own check control samples for EHEC tested in cattle slaughterhouses and cattle holdings inspected as a result of infections in humans in 2013–2018

Year	Sample type	Target number of samples	Actual number of samples	Positive samples, number	Percentage of positive samples, %
2018	Slaughterhouse, faecal sample	600	624	18	2,88
	Cattle holdings inspected as a result of infections in humans		7 holdings	3 holdings	
2017	Slaughterhouse, faecal sample	600	625	9	1,44
	Cattle holdings inspected as a result of infections in humans		5 holdings	4 holdings	
2016	Slaughterhouse, faecal sample	600	627	13	2,07
	Cattle holdings inspected as a result of infections in humans		5 holdings	1 holding	
2015	Slaughterhouse, faecal sample	600	625	17	2,72
	Holdings inspected as a result of infections in humans		4 holdings	1 holding	
2014	Slaughterhouse, faecal sample	1522	1545	40	2,59
	Holdings inspected as a result of infections in humans		6 holdings	2 holdings	
2013	Slaughterhouse, faecal sample	1522	1560	32	2,05
	Holdings inspected as a result of infections in humans		8 holdings	4 holdings	

In the amendment of the regulation in January 2015, the required number of faecal samples taken from slaughter cattle was reduced to an annual minimum of 600 samples for EHEC tests in the whole country. The target for tests in low-capacity slaughterhouses did not change.

The results of the control programme were reported to the EU in the annual report on zoonoses.

7.5 Recognition as and examinations for *Trichinella* in controlled housing conditions for pigs

The official recognition of the controlled housing conditions for pigs allows the reduction of the number of examinations for *Trichinella* in connection with the meat inspections for pigs. In the officially recognised controlled housing conditions, pigs are protected from *Trichinella* infections during their whole life; thus, they do not need to be examined after slaughtering. The pigs bred in establishments officially recognised as applying controlled housing conditions are exempt from the examination for *Trichinella* following an order from Evira. Evira (as of 1.1.2019, the Finnish Food Authority) recognises controlled housing conditions for pigs according to applications. The recognition can apply to a single holding or a group of holdings, i.e. compartments. In 2018, there was one pig holding in Finland that Evira had recognised as having controlled housing conditions. In practice this means that slightly under 600 slaughtered pigs were exempt of the examination for *Trichinella* in 2018. All the other pigs slaughtered in Finland were tested for *Trichinella* in connection with meat inspection. The number of these tests was about 1.8 million, all of which were negative.

7.6 Antimicrobial resistance monitoring programme

Antimicrobial resistance is monitored annually within the framework of the FINRES-Vet monitoring programme, which is based on the Implementing Decision 2013/652/EU and monitoring subjects selected on a national level.

The zoonotic bacteria included in the programme are salmonella and campylobacters. In 2018, antimicrobial sensitivity was tested in the salmonella isolated from cattle, pigs and poultry within the salmonella monitoring programme and in the *C. jejuni* strains isolated from broiler chicken within the framework of the own check control programme for the Campylobacter. Very small amounts of resistance are found in salmonella strains annually. In 2018, all strains isolated from Finnish farmed animals, except for the multidrug resistant *S. Kentucky* strain detected in four cattle holdings, were sensitive. About one in four *C. jejuni* strains isolated from broiler chicken were resistant to ciprofloxacin and nalidixic acid.

In 2018, the incidence of *E. coli* bacteria that produce ESBL, AmpC and carbapenemases in slaughtered broilers and in fresh, retailed broiler meat was also monitored. ESBL/AmpC bacteria were found in 13.1% of broilers (38 of 289): ESBL was found in 1.7% of the samples and AmpC-*E. coli* in 11.4%. The incidence of ESBL/AmpC-*E. coli* bacteria remained at the same level as in the previous monitoring period in 2016. In fresh broiler meat (n=300), the incidence of ESBL/AmpC-*E. coli* bacteria was 15.3%, which is lower than in 2016 (22.0%). In 2018, ESBL-*E. coli* was detected in 3.0% and AmpC-*E. coli* in 12.3% of the inspected samples of broiler meat.

7.7 Other microbiological monitoring

In 2018, Evira launched a national project on pathogens in packaged leaf vegetables that focuses on the incidence of pathogens in retailed ready-to-eat leaf vegetables, salad mixes and fresh herbs. The samples are tested for the occurrence of Shiga toxin-producing *E. coli*

(STEC), enteropathogenic *E. coli* (EPEC) bacteria and bacteria in the *Bacillus cereus* group and *Bacillus thuringiensis* bacterium that belongs to the group. In addition, the samples are tested for the *E. coli* bacteria that indicates the quality. As of May 2019, a total of 122 project samples had been collected in retail shops around Finland and tested. The project sampling was started in February 2018 and will continue until the end of 2020.

8 CHEMICAL FOOD SAFETY

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

The annual national residue control programme that concerns live animals and animal-derived food is required in both national and EU legislation (Council Directive 96/23/EC). The goal is to make sure that prohibited substances are not used in breeding animals for farming purposes and that food products do not contain residues of approved veterinary drugs in levels that exceed the maximum residue limits determined in the applicable legislation. The rate of incidence and levels of contaminants (e.g. heavy metals, pesticides and mould toxins) from the environment in food products are also monitored in the programme.

In 2018, the residue control programme was carried out almost as planned. Only samples from wild game (elk) were not tested. Tests were performed on a total of 4,265 samples, and more than 50,000 results were obtained. The implementation of the so-called multi-residue method led to a more detailed method of calculating the results in comparison to the results obtained in 2015. Table 46 indicates the numbers of samples based on production numbers categorised according to animal species or food products, the distribution of tests between substance categories and the number of non-compliant samples in 2018. Some of the samples were tested for the occurrence of substances from various categories. Samples that contain residues of approved drugs or other substances in levels that exceed the threshold values or reference points for action, as well as cases in which it can be demonstrated that animals have been treated medically against the regulations or given prohibited substances are reported as non-compliant. Any non-compliance always results in official inspections of the cases.

Table 46. The number of samples tested within the residue control programme for animal-derived food products categorised according to animal species or food products for tests (number) in different substance categories and the number of non-compliant samples in 2018 (25.3.2019)

Animal category or animal-derived food product	Prohibited substances	Approved veterinary drugs	Contaminants	Samples (total)	Non-compliant samples (number) and detected residues
Bovine animals	810	395	186	1237	
Pigs	594	803	217	1321	
Poultry	369	334	68	583	
Sheep	18	30	11	45	
Horses	35	26	7	54	
Elk	0	0	0	0	
Farmed game	11	65	39	96	4: liver/cadmium
					10: kidney/cadmium
Dairy	221	307	86	307	
Fish	84	59	76	176	
Egg	142	181	51	201	
Honey	57	57	39	57	

Residues of some prohibited growth promoters for farmed animals or their metabolites may also occur naturally in small concentrations. In addition to the results listed in Table 46, 2-Thiouracil was found in the urine samples of two bovines and one pig, a small concentration of beta-testosterone in the blood sample of three bovines, estradiol in the blood sample of one bovine, and nandrolone in the urine sample of one horse. Any use of prohibited substances was not detected.

No residues of approved drugs in levels that exceed the reference point for action were detected. Only one sample of milk and one sample of honey were found to contain small concentrations of antimicrobials.

A large proportion of the liver and kidney samples taken from reindeer that was 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. The mould toxin Zearalenol or its metabolites were detected in an abnormally high number of urine samples taken from pigs, cattle and sheep (a total of 46 cases) also in 2018.

The implementation and results of the contaminant monitoring programme in 2018 closely reflected those in previous years (Table 47). The percentage of non-compliant samples is usually between 0 to 0.02% of the tested samples, taking into account any possible residue caused by medical treatment of the animals. When samples that contain contaminants are taken into account, the percentage of non-compliant samples is slightly higher (0.33% in 2018). Nevertheless, the low levels of residue detected in a few samples did not risk food safety.

Table 47. Number of samples tested in the residue control programme for animal-derived food products, number of non-compliant samples and their percentage of the samples tested in 2010–2018.

Year	Samples	Prohibited substances	Approved veterinary drugs	Contaminants	Percentage of non-compliance/without contaminants	Percentage of non-compliance/with contaminants
	(number)	(number)	(number)	(number)	(%)	(%)
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
2010	4344	0	0	30	0	0,6

*) any use of prohibited substances was not detected

Any use of prohibited growth promoters has never been detected in Finland. Residues of approved drugs in levels that exceed the threshold value have only been detected in individual cases; in 2018, no cases were detected. The results indicate that food products produced in Finland are safe for consumers and that the regulations that concern the medical treatment of animals, including the withholding periods related to treatments, are complied with to a high degree.

The number of samples that contain contaminants has decreased during the period from 2010 to 2018. The number of samples taken from farmed game has remained the same and, in line with the results obtained in previous years, cadmium was found in a large proportion of the liver and kidney samples taken from reindeer. Since no samples from wild game were taken in 2014–2018, the results do not include test results of visceral samples from elks recorded in previous years. Since it is commonly known that the visceral heavy metal content in game has increased, as a risk management measure Finland does not approve the liver and kidneys of an elk over a year old as a food product. On the other hand, the number of samples that contain mould toxins varies significantly from year to year. Thus, the results can usually not be predicted accurately. In the case of mould toxins in the feed for farmed animals, farmers may in some cases affect the quality of the feed by modifying their practices. Thus, feed should be inspected during the late winter, particularly if there have been problems in the feed silage due to difficult weather conditions or other reasons. Autumn and winter season 2017–2018 was very rainy in Finland, which caused difficulties in the silage of feed grain, as in the previous year. This was also evident in the samples that contained mould toxins, the number of which was also higher than usual in 2018.

The control of prohibited substances and approved veterinary drugs is also a part of the control of cross compliance according to the common agricultural policy of the EU; therefore, non-compliances may also lead to the extension of the control to cover cross compliance and imply possible sanctions that apply to support.

The residue control programme for animal-derived food products is implemented according to EU regulations, which means that the possibilities of the Member States to plan the control procedures according to their own risk profile or to make significant year-to-year changes to the monitoring are limited. New test methods will be used in the implementation of the programme, and the methods will continue to be further developed. The new multi-residue methods in particular will open up new possibilities in testing for residues. Agreed changes to the EU rules will significantly change the contents of the programme in the coming years as the contaminant tests that currently belong to the programme will be omitted. Changes to the control systems are also to be expected. Within the permitted limits, sampling will still continue to be focused both in terms of time and location to food products or animal species with the highest risk of containing residues.

8.2 Residues of plant protectants

The pesticide residue control programme concerning foodstuffs is implemented annually as required by the EU legislation ((EC) No 396/2005, as amended) and the monitoring regulations of the Commission. The objective of the programme is to monitor that prohibited pesticide residues are not present in food products and that food products do not contain approved substances in levels that exceed the maximum residue levels defined in the legislation. On an annual level, Finland complies with the obligations regarding the number of samples and analyses defined in the control programme of the European Commission. Within the framework of the national part of the control programme, Member States are able to plan controls according to their own risk-based needs. In addition to the coordinated control programme and its national part, pesticide residues are controlled in accordance with the requirements of the organic control ((EC) No 889/2008), contaminant monitoring in animal-derived food products and live animals (96/23/EC) and the EU Regulation (EC) No 669/2009 on high-risk products. In addition to the monitoring of the compliance with the regulations, the pesticide residue control provides information on the current situation of domestic and imported products (from the EU Member States and third countries).

The pesticide residue control is also a part of the control of cross-compliance according to the Common Agricultural Policy of the EU. If any non-compliance with the regulations that concern pesticide residues is detected in a sample taken from a Finnish food product, the auditors of the Centre for Economic Development, Transport and the Environment will investigate the use of pesticides on farms as instructed by the Finnish Safety and Chemicals Agency Tukes, if necessary. On farms that have applied for agricultural support, the control may also extend to cover the control of cross-compliances where necessary.

Authorities collaborate in the control of the use of pesticides and their residues in foodstuffs. The residue control programme is carried out in collaboration between municipal food control authorities (Finnish products), Customs (other than animal-derived products imported from the internal EU markets and third countries) and the National Supervisory Authority for Welfare and Health, Valvira (alcoholic beverages). Evira (currently the Finnish Food Authority) also controls the pesticide residues in Finnish organic produce and animal-derived food products. The Centres for Economic Development, Transport and the Environment control the use of pesticides as instructed by the Finnish Safety and Chemicals Agency Tukes.

All in all, the control plans were well carried out, although the number of samples taken by Valvira (alcoholic beverages) and Evira (Finnish organic and regular products of plant origin) did not quite meet the target. The total amount of samples taken was fairly representative: starting from 2018, the statistics include all of the pesticide residue tests taken in connection with the monitoring of contaminants in animal-derived food products and live animals. Customs also took follow-up samples and samples not included in the plans in accordance with the Regulation (EC) No 669/2009. The actual number of samples compared to the objective of the pesticide residue control plan is shown in Table 48.

Table 48. Results of the pesticide residue control (number and % of samples) compared to the plan in 2013–2018

Year	Customs			Evira			City of Helsinki			Valvira		
	Plan	Samples taken	%	Plan	Samples taken	%	Plan	Samples taken	%	Plan	Samples taken	%
2018	1285	1321	103	130 (1) 5 (2) 182 (3) 289 (4) - (5) TOTAL 606	100 (1) 5 (2) 183 (3) 287 (4) - (5) TOTAL 575	94,9	-	-	-	25	20	80
2017	1345	1535	114	1321 (1) 22 (2) 183 (3) 2384 (4) 505 (5) TOTAL 440	1231 (1) 22 (2) 203 (3) 2224 (4) 845 (5) TOTAL 367	83,4	-	-	-	25	22	88
2016	1500	1686	112	1371 (1) 102 (2) 403 (3) 3384 (4) 185 (5) TOTAL 543	1261 (1) 82 (2) 353 (3) 2864 (4) 185 (5) TOTAL 473	87,1	80	80	100	25	24	96
2015	1435	1760	123	202	169	83,7	100	100	100	25	26	104
2013	1550	1921	124	245	244	99,6	110	110	100	30	20	66,7

¹ vegetables (incl. 14 organic samples in 2018)

² baby foods

³ animal-derived food products (as a part of the contaminant control programme for animal-derived food products and live animals; incl. 18 organic samples in 2018)

⁴ organic vegetables and plant-derived (organic legislation)

⁵ organic animal-derived (organic legislation)

A total of 1,915 samples were tested in the pesticide residue control. Accounting for the measurement uncertainty, the maximum residue level (MRL) of pesticides determined in the legislation was exceeded in 66 samples (3.4%). Eight samples (1.3% of organic samples) did not comply with the organic legislation. In the cases of all non-compliant products, the competent food control authorities took the necessary measures.

The percentage of samples taken from imported (from EU Member States and non-EU countries) products that contained pesticide residues was 62%. Residue was found most frequently in fresh fruit and berries as well as fresh vegetables. 66 product batches (6.4%) turned out to be non-compliant due to levels of one or more pesticides that exceeded the accepted maximum level. In addition, five batches of organic produce contained residues of substances prohibited in organic production. The delivery of any non-compliant products to the food product chain was stopped and follow-up samples were taken from the following batches before releasing them to the market. The majority of the non-compliant product batches were destroyed. The highest number of non-conformities that resulted in the prohibition of import or entry to market was detected in vegetables imported from Asia. 32 of the non-compliant batches were food products imported directly from non-EU countries to Finland, and 34 batches were food products in the internal market, some of which originated from outside of the EU. This indicates that not all non-EU countries are able to comply with farming practices that respect the MRL requirements of the EU. On the other hand, product batches imported via another EU Member State that originate in third countries are also included in the statistics for intra-EU imports, meaning that the non-compliances are even more frequently related to third countries than these figures indicate.

Recall measures that applied to consumers were taken in the cases of the batches that had reached the market and were assessed to potentially pose a risk to consumers (acute reference dose, ARfD, was exceeded or residues of pesticides not approved in the EU were detected in the product). These products were Chinese honey pomelo and Israeli basil. Based on the risk assessment, a RASFF report to other EU Member States was sent in connection with 18 non-compliant batches. In 48 batches, the residue level was at MRL level or only exceeded it slightly, which only resulted in a notice to the holder of goods.

In the 575 samples taken from Finnish products, residues that did not exceed the MRL level were found in 25 samples (4.3%). However, none of the samples taken from Finnish food products was non-compliant with the Finnish Food Act. Prohibited substances were not detected in organic non-processed plant-derived or animal-derived samples. In processed plant-derived samples, pesticides were detected in three cases. One of the pesticide findings was detected in a product from third countries. The origin of the pesticide residue could not be determined in the investigations. The two residue findings in Finnish products were due to shortcomings in the separation of products. Regular and organic raw-materials were processed on the same production lines, and the raw-materials had not been separated with sufficiently clear markings. The producers of food products should focus on the separation and markings of products when regular and organic products are produced on the same production lines. Nonetheless, the samples that were non-compliant with the organic legislation were compliant with the requirements of the food law.

Tables 49 and 50 show the percentage (%) of samples not compliant with the Food Act in 2013–2018 and the percentage of non-compliant samples among all samples tested in 2018.

Table 49. Percentage (%) of non-compliant samples in 2013–2018

Year	Samples	Non-compliant	Non-compliant
	number	number	%
2018	1915	66	3,4
2017	2008	57	2,8
2016	2263	28	1,2
2015	2088	35	1,7
2014	2383	49	2,1
2013	2240	63	2,8

Table 50. Percentage of samples in pesticide residue control not compliant with the Food Act or organic legislation among all samples tested in 2018

Origin	Customs			Evira			Valvira		
	sample s tested	residue findings	non-compliant,	samples tested	residue findings,	non-compliant,	samples tested	residue findings,	non-compliant,
	number	number	number	number	number	number	number	number	number
Finnish	0	0	0	574	25	2	1	0	0
Products from EU Member States	682 (*)	370	34	0	0	0	10	2	0
Products from third countries	350 (**)	206	32	1	1	1	9	1	0
Total	1032	576	66	575	26	3	20	3	0

*) Part of the samples originated in third countries (the origin of some of the products is unknown)

***) Better: "Customs-cleared products"

In addition to the monitoring programme, municipal food control authorities conducted a total of 32 inspections that focused on the adequacy and functionality of the own-check controls of plant protectant residues within the framework of the Oiva system (Oiva item 17.12). The sites to be monitored for pesticide residues in the Oiva system are selected based on the risk according to the influence and scope. In 2018, all of the Oiva inspections resulted in A ratings. In other words, shortcomings were not detected in the pesticide management (Table 49). It can be concluded from the results that pesticide residues were inspected fairly infrequently in relation to the number of items that could be expected to need inspection: Have the items to be inspected been identified correctly? Are the outlines defined in the guidelines too wide? Is the scale for assessment used correctly? Further training and guidance is still needed in order to improve the efficiency and uniformity of the monitoring. The control network for contaminants and pesticide residues is a means of advancing this goal.

Table 51. Pesticide residue control and its results as a part of the Oiva system implemented by the municipal food control authorities in 2015-2018

Year	Inspections	A	B	C	D	Guidance and instruction	Notices	Coercive measures
	number	%	%	%	%	number	number	number
2018	32	100	-	-	-	-	-	-
2017	22	100	-	-	-	-	-	-
2016	44	95	5	-	-	2	-	-
2015	25	96	4	-	-	1	-	-

Only minor changes to the control procedures are necessary over the coming years, since the monitoring programme will be implemented following the same regulations as in 2018 and subject to available resources. The inclusion of the pesticide residue control in the Oiva system has further harmonised the control and has made it more regular on a national level. In addition, the Oiva system simplifies reporting and supports the detection of any systematic irregularities.

8.3 Contaminants

The food contaminant control programme concerning foodstuffs is implemented as required by the EU legislation ((EC) No 1881/2006, as amended) and the monitoring regulations of the Commission. The objective of the control is to monitor that the levels of harmful contaminants do not exceed the MRL levels defined in the legislation and/or the levels considered safe, while also providing information regarding the current national status. The contents of contaminant control is not set in the EU legislation. Consequently, Member States can plan the control fairly freely according to their own risk-based needs.

The inspections coordinated by Evira/the Finnish Food Authority mostly concentrate on mapping the current situation at the national level and on preparing legislation. The control plan for inspections coordinated by Evira in 2018 was implemented fairly well although not all of the planned samples were taken (Table 52). Matrices inspected in 2018 included salads, pork meat and fat, wheat and oat, tomatoes, potatoes, farmed mushrooms and spinach.

Table 52. Planned number of samples for food contaminants and the actual number of samples (%) in 2012–2018 (control and mapping coordinated by Evira)

Year	Contaminants									
	POPs	Nitrate	PAH	Acrylamide	Heavy metals	Mould toxins	Coumarin	Radioactive substances	Perchlorate	Erucic acid
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%	-	-	-

Within the control and mapping coordinated by Evira, 49 samples were tested and 123 analyses were conducted for compounds subject to a maximum allowed content defined in the legislation (dioxins, dioxin-like PCBs, indicator PCBs, nitrate, lead, cadmium, ergot sclerotia and mould toxins [DON, Zearalenol, fumonisins, ochratoxin A]). Non-compliance was not detected in the samples (Table 53). 1,074 analyses were conducted for compounds that are not yet subject to a maximum allowed level (such as ergot alkaloids, perfluorinated surface treatments, brominated flame retardants, ergot alkaloids, certain heavy metals and mould toxins) defined in the legislation. The levels of these compounds in food products were mainly very low, and therefore the results did not provide cause for control measures.

Table 53. The number of samples tested in the control and mapping of food contaminants (coordinated by Evira), the percentage of non-compliant products (%) and the number of individual analyses in 2012–2018

Year	Samples tested number	Percentage of non-compliance %	Analyses for compounds subject to the maximum allowed limits defined in the legislation	Analyses for compounds without the maximum allowed limits defined in the legislation
			number	number
2018	49	0	123	1074
2017	172	2 (**)	362	1151
2016	179	1 (*)	130	1771
2015	80	0	133	834
2014	149	0	257	3351
2013	99	0	197	2921
2012	316	2	277	4056

*) In two raw grain samples, the maximum allowed limit defined for ergot sclerotia in the legislation was exceeded. The maximum limit of ergot sclerotia is applied to untreated grain brought to market for first processing. First processing refers to any physical or thermal treatment of the grain, excluding drying. Therefore, the application of the maximum allowed limit in the cereal chain is appropriate in the reception of the cereal after the primary treatment. In these two cases, the collection of samples by authorities was focused on primary production, which is why the municipal food control authorities took appropriate control measures. This included making sure that the buyer of grain received information on the excessive level of ergot sclerotia in the raw cereal. This enabled the buyer to take the necessary risk-management measures and to ensure on their part that food products brought to market do not contain it in levels that exceed the maximum allowed limit.

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

Municipal food control authorities conducted a total of 188 inspections related to food contaminants within the framework of the Oiva system. The distribution of the results of the inspections is visible in Table 54. The Oiva results indicate that shortcomings (Crating) in the management of contaminants were detected in three of the inspected sites. The detected shortcomings were related to the fact that the operators in the food sector had not observed the management of PAHs in their own check controls or there were shortcomings in the sample collection related to PAHs.

Table 54. Control of food contaminants and its results as a part of the Oiva system implemented by the municipal food control authorities in 2015–2018

Item to be inspected	Year	Inspections number	A %	B %	C %	D %	Guidance and instruction number	Notices number	Coercive measures number
17.13 Contaminants from the environment	2018	25	96	4	-	-	1	-	-
	2017	21	81	19	-	-	4	-	-
	2016	23	91,3	8,7	-	-	1	-	-
	2015	18	88,9	11,1	-	-	2	-	-
17.14 Mould toxins	2018	32	100	-	-	-	-	-	-
	2017	22	95	-	5	-	-	1	-
	2016	28	100	-	-	-	-	-	-
	2015	21	100	-	-	-	-	-	-
17.15 Contaminants from processing	2018	112	91	7	3	-	18	3	-
	2017	62	81	16	3	-	10	2	-
	2016	62	82,3	14,5	1,6	1,6	8	2	1
	2015	32	68,8	31,3	-	-	10	2	-
17.16 Other contaminants	2018	19	100	-	-	-	-	-	-
	2017	25	96	-	4	-	-	1	-
	2016	26	96,2	3,8	-	-	1	-	-
	2015	7	85,7	14,3	-	-	1	-	-

The Oiva system has further harmonised the control of contaminants from the environment and other contaminants and makes it more regular at a national level. In addition, the inclusion of all food premises into the Oiva system simplifies the reporting and supports the detection of any systematic shortcomings.

8.4 Monitoring of GM food products

Since GM foods are not produced in Finland, all GM food products are imported, which means that the focus of official controls is in the import controls conducted by Customs. The control of the country of origin of GM food products belongs to the Oiva control system. Additionally, around 10 risk-based food samples coordinated by Evira/the Finnish Food Agency are taken annually as a part of the regulatory food control.

In 2018, genetically modified ingredients were subjected to 30 Oiva inspections, and shortcomings were not detected in 93% of the inspections (Table 55).

Table 55. The monitoring of genetically modified ingredients within the Oiva system in 2018

Year	Number of inspections	Rating A	Rating B	Rating C	Rating D	Guidance (number)
2018	30	28	2	-	-	2

Nine samples were taken of food products in accordance with the control and sampling instructions of Evira. The samples were taken by local food control authorities and Evira, and the samples were analysed in the Evira laboratory.

Based on the risks, the sample collection was focused on raw-materials and finished food products that might contain GM ingredients (such as soy, maize, rape, [Asian] rice, papaya). Organic products and products that are claimed to be “GMO free” are subject to the controls. Where possible, the samples were collected from raw-materials used in production, allowing the products entering the market to be controlled in the early stages of the production chain.

The planned number of samples was 10 (implementation rate 90%). Genetically modified ingredients were found in two samples (1 soy protein and 1 soy bean). In both samples, the concentration of GM materials was below the limit of quantification of 0.1% in the analysis method, which means that the concentration could not be determined reliably. The concentrations detected did not exceed the limit (0.9%) set in the applicable legislation, either. Genetically modified ingredients not approved in the EU were not detected in either of the samples so that all of the inspected products were compliant with the requirements of the legislation on GM products (other than approved genetically modified ingredients were not detected and/or consumers were not misled) (Table 56).

Table 56. The results of the GM sample collection coordinated by Evira in 2018

	Samples (number)	GM detected (%)	GMO concentration exceeds the limit or unapproved GMO (%)	Voluntary marketing claim “GMO free” in use (%)	Compliant samples (%)
2018	9	22	0	0	100

Customs control the conformity of plant-derived food products and composed food products imported from outside of the EU and from EU Member States to Finland. Customs analyses ca. 150–200 samples taken from food products for genetically modified materials. For more information (in Finnish) on the controls carried out by Customs, visit: <https://tulli.fi/web/tullilaboratorio/etusivu>.

8.5 Harmful and prohibited substances in feeds

Feed control covers the whole operating chain from the primary production of feed to production, import, export, marketing, storage, transportation and use in the farms. The results of the feed sample controls indicate that feed produced and marketed in Finland mostly continues to fulfil the statutory requirements for the safety and quality of feed according to the Feed Act.

The number of samples taken within the scope of official feed control followed the control plan in 2018. The number of analyses for harmful and prohibited chemical substances conducted within the official feed control was 5,280, which is 111% of the planned number of analyses. In the case of official samples, the number of feed samples for the control of mycotoxin and heavy metal concentrations and genetic modifications of feed materials

exceeded the planned number of samples, which increased the number of analyses conducted.

In the feed control for chemical harmful and prohibited substances, shortcomings regarding the concentrations of mycotoxins, heavy metals, melamine, dioxins and plant protectants were not detected. In one production batch of fish meal, the concentration of dioxins exceeded the reference point for action, however, the concentration did not exceed the maximum allowed limit for dioxins in fish meal. A non-conformity regarding the residues of coccidiostats was detected in one feed factory. The batch was not approved and it was required to be recalled, but a part of the feed batch had already been fed to animals. However, the possibly contaminated carcass parts were prevented from ending up in food exports and thus, food safety was not compromised significantly.

The production of medicated feeds follows the current animal health situation. In the year under review, only small amounts of medicated feeds were produced: medicated feeds were only produced for fish, and medicated feed containing zinc was produced for pigs. The production of medicated feeds and the own-check analyses related to medicated feeds were inspected in connection with the inspections of the operators involved in the production of medicated feed. Causes for notice regarding medicated feeds containing zinc were not detected in the sampling conducted by authorities.

The control of genetic modifications concentrated on the control of the genetically modified organisms approved in the EU and the labelling and traceability of the feed produced from them. Feeds with no indication of genetic modification were targeted in the sample collection by authorities. However, genetically modified feed was also inspected. Genetically modified components not approved in the EU were not detected in the inspected feeds. Levels of approved genetically modified components that require the feed batch to be labelled as genetically modified were not detected in the sample collection by authorities. During the year under review, a widespread contamination of a regular soy protein concentrate produced in Finland with a genetically modified raw-material was detected. The contamination of the regular feed material took place in the factory in connection with production and storage. The contaminated soy protein concentrate was delivered to two feed factories for the production of piglet feeds and to one feed factory for the production of fish feeds. As a result of the incident, various requests for reporting and action were submitted to feed sector operators, additional inspections of the operators were carried out, more frequent own-check analyses were required and the frequency of sample collection by authorities was increased.

Extensive use of multi-method analyses was made in the testing for chemical substances. The use of multi-method analyses further enhanced the efficiency of the control of residues of harmful and prohibited chemical substances in feed, as well as the control of nutritional aspects of feeds using a single sample.

[Feed control report 2018 \(in Finnish\)](https://www.ruokavirasto.fi/tietoa-meista/julkaisut/raportit-ja-selvitykset/)

(<https://www.ruokavirasto.fi/tietoa-meista/julkaisut/raportit-ja-selvitykset/>)

8.6 Food allergies

62 cases of serious allergic reactions were reported to the national anaphylaxis register, 39 of which were caused by food. An error is an error concerning allergens when a product contains an ingredient that causes an allergy to some consumers, but this allergen has not been listed in the labelling. Allergens caused the recall of as many as 36 food products, which represents 21% of all recalls (in 2017, the corresponding percentage was 8%, in 2016, 18%, and in 2015, 27%). In 2018, allergens were the most frequent cause for recalls. In absolute numbers, the number of recalls resulting from allergens was nearly three times as high as in 2017.

The management of allergens and substances that cause intolerances is evaluated in the Oiva inspections (Table 57). According to the Oiva evaluation scale, the requirements are mostly complied with in the operations or the shortcomings detected were minor.

Table 57. The Oiva results – allergens and substances that cause intolerances

Allergens and substances that cause intolerances								
Sector	Inspected number	Results/number of inspections (%)				Guidance and instruction number	Notice number	Coercive measures number
		A number (%)	B number (%)	C number (%)	D number (%)			
Food service	8700	8651 (96,2)	303 (3,4)	42 (0,5)	1	348	41	1
Food sales	976	995 (97,0)	26 (2,5)	5 (0,5)		31	4	
Food production/fish sector	37	42 (91,3)	4 (8,7)			4		
Food production/meat sector	76	86 (86,0)	13 (13,0)	1 (1,0)		12	1	
Food production/dairy sector	31	30 (93,8)	2 (6,3)			2		
Food production/cereal and vegetable	280	270 (92,5)	18 (6,2)	4 (1,4)		25	4	
Food production/other	60	65 (98,5)	1 (1,5)			1		
Food product storage and freezing	12	11 (84,6)	2 (15,4)			2		

8.7 Nutritional safety

Nutritional safety was addressed in the new national nutritional recommendations for early childhood education (day-care centres) drafted by the National Nutrition Council and published in 2018. In addition to well-balanced and varied diet, factors such as hand hygiene, allergens and intolerances when serving meals and the Oiva system were considered when drafting the new recommendations. Instructions for the safe use of foodstuffs to children, adolescents, and pregnant and breastfeeding women were updated on the new website of the Finnish Food Authority (<https://www.ruokavirasto.fi/en/private-persons/information-on-food/instructions-for-safe-use-of-foodstuffs/>), and they should be linked to all valid food recommendations for different age groups (<http://urn.fi/URN:ISBN:978-952-343-254-3>, <http://urn.fi/URN:ISBN:978-952-302-992-7>, <http://urn.fi/URN:ISBN:978-952-302-791-6>).

In connection with the national implementation of the food reformulation programme of the Commission, the Nutrition Commitment initiative was further implemented in collaboration with Ministries and the sector. As of the end of 2018, the operators (industry, commerce, institutional catering) had entered into a total of 50 Nutrition Commitments to improve the quality of food products and to promote the practical implementation of food recommendations.

9 RISK ASSESSMENT AND RESEARCH PROJECTS IN FOOD SAFETY

Risk assessment

The initiative for the development of a statistical method (BIKE) that took several years was officially completed, but the work to further simplify the model validated for chemical and microbiological food hazards was continued and the drafting of scientific articles was started. If a dose-response model is linked to the BIKE model, the number of those affected can also be estimated.

Abstract: <https://www.ruokavirasto.fi/en/organisations/risk-assessment/projects-of-risk-assessment/microbiological-food-safety/exposure-to-microbiological-and-chemical-hazards-via-food-bike-project/>

For risk analyses, a 24-hour interview method (Consumption and Handling, CoHa) was developed for collecting data on food consumption. The method accounts for the characteristics of the product as well as factors related to the consumer and preparation of the food better than other interview methods currently in use. It was not possible to organise a comprehensive study covering a representative sample of the whole age group within the project. However, the suitability of the method for collecting the required data was tested by conducting interviews to 42 volunteers aged 65 or over. A scientific article regarding the method was published in 2018.

The exposure of consumers to food enhancers was mapped for the development of a national control system for additives and flavourings. The results of a mapping of flavourings were published in the Evira research report 1/2018, and the results regarding additives in the

Evira research report 2/2018. The results are partly based on the data received from the food industry on actual usage and partly on maximum permissible levels of intake of the substances. According to the results, additives were grouped into substances whose intake in Finland is conservatively estimated to be on a safe level and substances whose intake requires further study. The latter category includes some colouring agents, preservatives and sweeteners as well as some agents that modify the texture of a food product. The assessment of the intake of flavourings proved to be challenging due to the amount of uncertainty involved in the methods used and the scarcity of information available regarding the occurrence and concentrations of flavourings in foodstuffs. An actual risk analysis concerning enhancers can only be conducted after the most serious lacks of information have been remedied.

With the EU legislation on polycyclic aromatic hydrocarbons (PAH) becoming more stringent, the exposure of Finnish consumers to PAHs was studied. The results show that the majority of exposure is caused by food products with low concentrations of the substances but with high levels of intake, such as sausages and bread. The project continues until 2019.

The objective of the “Risk profile of plant food supplements” project was to assess the possible health hazards of the plant food supplements most commonly consumed in Finland. The assessment of the intake of plant food supplements and the effects of the substances they contain was continued based on the results of the PlantLIBRA study of the EU that was conducted earlier. The preliminary results indicate that Finns are not exposed to any specific health hazards; however, food supplements are sometimes used together or at the same time with medicinal products, in which case the combined effects of plant food supplements and medicinal products may have adverse effects on health, particularly because people do not tend to mention the use of food supplements to the consulting doctor. The project will be completed in 2019, and the report concerning it will be published in the same year.

Abstract: <https://www.ruokavirasto.fi/en/organisations/risk-assessment/projects-of-risk-assessment/chemical-food-safety/a-risk-profile-of-plant-food-supplements2/>

The “Risk profile of contaminants – national point of view” project identifies the most essential contaminants listed in the EU legislation or monitoring recommendations from the point of view of Finland. The contaminants are prioritised according to their toxicity and the information available on the exposure of Finns to the substances. In addition, any gaps in the information regarding the occurrence or toxicology of the contaminants are mapped. The project continues until 2019.

Abstract: <https://www.ruokavirasto.fi/en/organisations/risk-assessment/projects-of-risk-assessment/chemical-food-safety/risk-profile-of-contaminants-national-point-of-view/>

The exposure of Finnish children to heavy metals was assessed in a project, the results of which were published in a report completed in 2015. In 2017 and 2018, scientific articles regarding the project were published. A similar project assessing the dietary heavy metal exposure of adults was started in 2017. In addition to the heavy metals cadmium, lead, arsenic, mercury and nickel, the project covers aluminium and assesses the dietary exposure of Finnish adults to the mentioned substances in 2007 and 2012. The project continues until 2019.

Abstract: <https://www.ruokavirasto.fi/en/organisations/risk-assessment/projects-of-risk-assessment/chemical-food-safety/dietary-heavy-metal-exposure-of-finnish-adults/>

A tool for categorising and ranking risks according to their health effects has been developed in a “Risk Ranking” project with Swedish Livsmedelsverket, among others. The objective is to

categorise the most relevant chemical and biological risks for food safety clearly to facilitate risk management. The project continues until 2019.

The hygiene passport project, an evaluation of the efficacy of the Finnish hygiene proficiency system, was started by using risk assessment methods. The objective is to verify the importance of a national proficiency test as an indicator of basic food hygiene proficiency, study factors that affect the performance, the permanence of the skills of those who have passed the test and the effect of proficiency certification on working methods and the control results obtained by companies. The project continues until 2019.

The “Control and prevention of antimicrobial resistance in the pork production chain” (LÄKÄ) project investigates the occurrence of antimicrobial resistance in the pork meat production chain and the factors affecting the resistance. A popular information package on resistance for producers of meat will also be drafted in the project. The project will be completed in 2019. The abstract of the project is available at

<https://www.ruokavirasto.fi/en/organisations/risk-assessment/projects-of-risk-assessment/epizootic-diseases/control-and-prevention-of-antimicrobial-resistance-in-the-pork-production-chain-laka/>

The Impact of pests on the persistence and spearing of zoonotic bacteria on production farms (PESTANIMAL) project studies the presence of zoonotic bacteria (bacteria that transmit between people and animals) in pest animals that have been caught from the surroundings of production farms and feed production premises and investigates the antibiotic resistance of these bacteria. The project produces study material and methods that can be utilised later in zoonosis monitoring programs and in other national and international research projects. The project was started in 2017 and will continue until 2020.

The Presence and stability of viruses in the food production chain and in food industry processes (VIRSTA) project aims at investigating and assessing the effects of processing on the elimination of the hepatitis E virus (HEV) and African swine fever virus in food products that contain pork meat. The project was started in 2018.

The Costs and risk assessment of the effects of the food system on public health (RUORI) project looks at the costs incurred to society, companies and consumers as a result of treating diseases and outbreaks related to food, as well as the control of food products and drinking water. The most significant risks of the food system in terms of public economy will be identified by using cost analysis. In addition, a more efficient allocation of existing resources by focusing on the most impactful factors and cancelling other restrictions. The project funded using the TEAS funding granted by the Prime Minister’s Office was started in 2018 and will end in 2019.

Communication inside Risk Assessment and Risk Management (COMRISK) is an international collaboration project funded through the Partnering Grants initiative of the European Food Safety Authority (EFSA) that aims to improve the communication between the risk assessment and decision-makers. The aim of the pilot project is to improve the communication of food risk assessment results so that they are presented in a format allowing their use in decision making more efficiently than the current system. The project was started in 2018 and will end in 2020.

Research on microbiological food safety

The revision and validation of the international standard method for detecting *Y. enterocolitica*: The results were published in January 2019 in a theme issue of the International Journal of Food Microbiology magazine (<https://www.sciencedirect.com/journal/international-journal-of-food-microbiology/vol/288/suppl/C>) For more information, please refer to the report of the Finnish Food Authority: <https://www.ruokavirasto.fi/en/laboratory-services/News/the-performance-of-the-core-methods-in-food-microbiology-validated/>

“INNUENDO: A novel cross-sectorial platform for the integration of genomics in surveillance of foodborne pathogens” is a project that developed a common platform for authorities to utilise the results of whole genome sequencing in investigating foodborne outbreaks and monitoring pathogens. The abstract of the project is available at <https://www.ruokavirasto.fi/en/organisations/scientific-research/scientific-projects/current/food-safety-and-quality-research/innuendo-a-novel-cross-sectorial-platform-for-the-integration-of-genomics-in-surveillance-of-foodborne-pathogens/>.

The “Antimicrobial resistance and residues on cattle farms – effects on the environment and health” (NAMI) project examined how antimicrobial-resistant bacteria, resistance genes and antimicrobials, including their metabolites, spread in Finnish conditions from medicated cows via the manure chain into the farm environment and further into the surrounding environment. The project report will be published in 2019. The abstract of the project is available at <https://www.ruokavirasto.fi/en/organisations/scientific-research/scientific-projects/current/food-safety-and-quality-research/antimicrobial-resistance-and-residues-on-cattle-farms--effects-on-the-environment-and-health-nami/>.

In 2018, Evira conducted a raw pet food project that, in addition to the statutory official inspections of enterobacteria and salmonella, investigated the occurrence of Shiga toxin-producing *E. coli* (STEC) and thermotolerant Campylobacteria. Furthermore, the occurrence of resistant bacteria (MRSA, ESBL, AmpC and carbapenemases-producing *E. coli* bacteria) was mapped. The results will be published in 2019.

Chemical food safety and nutrition

The three-year long EU Fish III project (Changes in the contaminant levels in Finnish wild fish) was completed at the end of 2018. The report was completed in October 2018, and soon after the completion of the report, the results were presented to stakeholders and other parties interested in the matter in a seminar. The EU-fish III project provided more information on the levels of dioxin and PCB compounds as well as polybrominated diphenyl ethers (PBDE), perfluoroalkyl substances (PFAS) and heavy metals in the domestic fish species found in Finnish lakes and the Baltic Sea that are of commercial significance and primarily used in Finland for food. Another objective is to promote and guide the use of fishery resources. Link to the report and a notice <https://www.ruokavirasto.fi/yriytykset/elintarvikeala/elintarvikealan-yhteiset-vaatimukset/valvonta/tutkimukset-ja-projektit/vierasaineisiin-liittyvia-hankkeita/kotimaisen-kalan-kilpailukyky-elintarvikkeena-ja-rehuna-parannetaan-yhteishankkeessa/lopetusseminaari-25.10.2018/>.

In the Makena funded project *Alkuperältään aidot* (Genuine in their origin), the Natural Resources Institute Finland (Luke) and Evira develop a method for identifying the cases of falsifications of the origin of strawberries. In 2017–2018, strawberry samples were collected at Finnish strawberry farms to analyse the ratios of certain stable isotopes and the concentrations of the elements the berries contain. This data was included in a reference database, and by comparing the results of control samples to the data in this database, it can be deduced whether the sampled strawberries originate from Finland or abroad. In the summer 2018, the food control authorities in Lahti and Helsinki already collected some control samples to check the origins of strawberries to pilot the system. In the autumn, a researcher was recruited to set up isotope analytics capabilities at the Finnish Food Authority. A one-year extension to 2019 was granted to the project.

The Fineli food composition database is the single most important source of information for the industry and small businesses in Finland for compiling the nutritional information and energy content information for labelling. Other groups that use Fineli include decision-makers, researchers, risk assessment, health care providers, food service providers, software designers, educators and citizens. In 2018, the decision was made to strengthen the role of Evira/the Finnish Food Authority in producing analyses to the Fineli food composition database so that while the monitoring group still makes the decisions on the prioritisation of the work, i.e. the food products and nutrients to be analysed, the majority of the analyses will be carried out by the Finnish Food Authority as a part of its official duties.



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