European Commission

RASFF

The Rapid Alert System for Food and Feed

2016 Annual Report

Health and Food Safety

RASFF
Annual Report 2016

RASFF — The Rapid Alert System for Food and Feed — 2016 annual report

More information about RASFF — The Rapid Alert System for Food and Feed online:
http://ec.europa.eu/food/safety/rasff/index_en.htm

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Preamble

Dear reader,

If you are familiar with the RASFF you may skip the first chapter freely and read more about RASFF in 2016, but if you are unfamiliar with it or would like to know more, you are invited to go through this quick manual. Enjoy the report!

Acronyms used in this report

AAC	Administrative Assistance and Cooperation System
BTSF	Better Training for Safer Food
CED	Common Entry Document
CVED	Common Veterinary Entry Document
DNA	Deoxyribonucleic Acid
EC	European Commission
ECCP	European Commission Contact Point (for RASFF)
ECDC	European Centre for Disease Prevention and Control
EEA	European Economic Area
EFSA	European Food Safety Authority
EPIS-FWD	Epidemic Intelligence Information System for food- and waterborne diseases and zoonoses of ECDC
EU	European Union
EWRS	Early Warning Response System
FBO	Food Business Operator
FCM	Food Contact Material
FF	Food Fraud
HUS	Hemolytic-Uremic Syndrome
INFOSAN	International Food Safety Authorities Network
iRASFF	RASFF's online platform
IT	Information Technology
MLVA	Multiple-Locus Variable number tandem repeat Analysis
MPN	Most Probable Number
OJ	Official Journal
PFGE	Pulsed-Field Gel Electrophoresis
RASFF	Rapid Alert System for Food and Feed
ROA	Rapid Outbreak Assessment
RRA	Rapid Risk Assessment
STEC	shigatoxin-producing Escherichia coli
TRACES	Trade Control and Expert System
TSEs	Transmissible Spongiform Encephalopathies
US FDA	United States (of America) Food and Drug Administration
UI	Urgent Inquiry
WGS	Whole Genome Sequencing

Contents

1 A quick manual to the RASFF

The RASFF was put in place to provide food and feed control authorities with an effective tool to exchange information about measures taken responding to serious risks detected in relation to food or feed. This exchange of information helps Member States to act more rapidly and in a coordinated manner in response to a health threat caused by food or feed. Its effectiveness is ensured by keeping its structure simple: it consists essentially of clearly identified contact points in the Commission, EFSA, EEA and at national level in member countries, exchanging information in a clear and structured way by means of an online system called *iRASFF*.

The legal basis

The legal basis of the RASFF is Regulation (EC) N° 178/2002. Article 50 of this Regulation establishes the rapid alert system for food and feed as a network involving the Member States, the Commission as member and manager of the system and the European Food Safety Authority (EFSA). Also Switzerland and the EEA countries Norway, Liechtenstein and Iceland are longstanding members of the RASFF.

Whenever a member of the network has any information relating to the existence of a serious direct or indirect risk to human health deriving from food or feed, this information is immediately notified to the Commission under the RASFF. The Commission immediately transmits this information to the members of the network.

Article 50.3 of the Regulation lays down additional criteria for when a RASFF notification is required.

Without prejudice to other Community legislation, the Member States shall immediately notify the Commission under the rapid alert system of:

(a) any measure they adopt which is aimed at restricting the placing on the market or forcing the withdrawal from the market or the recall of food or feed in order to protect human health and requiring rapid action;

(b) any recommendation or agreement with professional operators which is aimed, on a voluntary or obligatory basis, at preventing, limiting or imposing specific conditions on the placing on the market or the eventual use of food or feed on account of a serious risk to human health requiring rapid action;

(c) any rejection, related to a direct or indirect risk to human health, of a batch, container or cargo of food or feed by a competent authority at a border post within the European Union.

Regulation (EC) N° 16/2011 lays down requirements for members of the network and the procedure for transmission of the different types of notifications. A distinction is made between notifications requiring rapid action (alert notifications) and other notifications (information notifications and border rejection notifications). Therefore, definitions of these different types of notifications are added. In addition, the role of the Commission as manager of the network is detailed.

The members

All members of the system have out-of-hours arrangements (24/7) to ensure that in case of an urgent notification being made outside of office hours, on-duty officers can be warned, acknowledge the urgent information and take appropriate action. All member organisations of the RASFF – for which contact points are identified – are listed and their homepages can be consulted online at the following RASFF web page: http://ec.europa.eu/comm/food/food/rapidalert/members_en.htm

The system

RASFF notifications

RASFF notifications usually report on risks identified in food, feed or food contact materials that are placed on the market in the notifying country or detained at an EU point of entry at the border with an EU neighbouring country. The notifying country reports on the risks it has identified, the product and its traceability and the measures it has taken.

According to the seriousness of the risks identified and the distribution of the product on the market,

the RASFF notification is classified after verification by the Commission contact point as alert, information or border rejection notification before the Commission contact point transmits it to all network members.

- **alert notifications**

An 'alert notification' or 'alert' is sent when a food, feed or food contact material presenting a serious risk is on the market and when rapid action is or might be required in another country than the notifying country. Alerts are triggered by the member of the network that detects the problem and has initiated the relevant measures, such as withdrawal or recall. The notification aims at giving all the members of the network the information necessary to verify whether the concerned product is on their market, so that they can take the necessary measures.

Products subject to an alert notification have been withdrawn or are in the process of being withdrawn from the market. Member States have their own mechanisms to carry out such actions, including the provision of detailed information through the media if necessary.

- **information notifications**

An 'information notification' concerns a food, feed or food contact material for which a risk has been identified that does not require rapid action either because the risk is not considered serious or the product is not on the market at the time of notification.

Commission Regulation (EU) No 16/2011 defines two sub-types of information notifications:

'information notifications for follow-up' are related to a product that is or may be placed on the market in another member country

'information notifications for attention' are related to a product that:

(i) is present only in the notifying member country; or

(ii) has not been placed on the market; or

(iii) is no longer on the market

- **border rejection notifications**

A 'border rejection notification' concerns a consignment of food, feed or food contact material that was refused entry into the European Union for reason of a risk to human health and also to animal health or to the environment if it concerns feed.

- **original notifications and follow-up notifications**

A RASFF notification referring to one or more consignments of a food, feed or food contact material that were not previously notified to the RASFF is an 'original' notification, classified as alert, information or border rejection notification. In reaction to such a notification, members of the network can transmit 'follow-up' notifications which refer to the same consignments and which add information to the original notification such as information on hazards, product traceability or measures taken.

- **rejected and withdrawn notifications**

An original notification sent by a member of the RASFF can be rejected from transmission through the RASFF system, as proposed by the Commission after verification and in agreement with the notifying country, if the criteria for notification are not met or if the information transmitted is insufficient.

An original notification that was transmitted through the RASFF can be withdrawn by the Commission in agreement with the notifying country if the information upon which the measures taken are based turns out to be unfounded or if the transmission of the notification was made erroneously.

RASFF news

A 'RASFF news' concerns any type of information related to the safety of food or feed which has not been communicated as an alert, information or border rejection notification, but which is judged interesting for the food and feed control authorities in member countries.

RASFF news items are sometimes based on information picked up in the media or forwarded by colleagues of food or feed authorities in third countries, EC delegations or international organisations, after having been verified with any member countries concerned.

All information on the RASFF can be found on the website at: http://ec.europa.eu/food/food/rapidalert/index_en.htm

2. RASFF in 2016

In 2016, a major restructuring in DG SANTE also had an impact on the team managing the RASFF. The Commission's RASFF team was integrated in a new unit, [1] together with the staff responsible for the Administrative Assistance and Cooperation (AAC) and Food Fraud (FF) networks, as well as TRACES. In line with the objective to ensure better linking and integration of these networks, the team managing the RASFF was reinforced and given the additional task – apart from the RASFF – to manage the daily operation of the AAC and FF networks, as well as the maintenance, support and development of its IT applications.

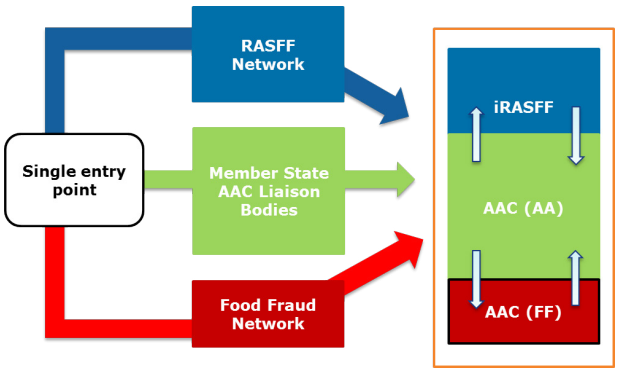
The IT application for AAC and FF was newly developed and launched in November 2015. There are two flavours: one for administrative assistance and cooperation and one specifically for food fraud cases, the latter needing a higher level of control due to the confidential nature of the information shared.

As the picture below demonstrates, the Commission wants to work towards a better integration of these three networks, which have in common that they are mostly working with information generated through official controls. The new Regulation (EU) 2017/625 on official controls aims to integrate the IT systems related to official controls. In line with this objective, and because RASFF has the most advanced IT system, the Commission aims at extending and improving the iRASFF tool to host the AAC and FF networks as well.

Where do RASFF notifications come from?

RASFF notifications are triggered by a variety of things. Just under half of the total number of notifications concern controls at the outer EEA borders [2] at points of entry or border inspection posts when the consignment was not accepted for import ("border control – consignment detained"). In some cases, a sample was taken for analysis at the border but the consignment was not held there but was forwarded to its destination under customs' seals ("border control – consignment under customs"). This means that it should remain stored there until the result of the analysis is available. In other cases the consignment was released ("border control - consignment released") without awaiting the analytical result, which means that the consignment would need to be retraced if the result is unfavourable and the product needs to be withdrawn from the market.

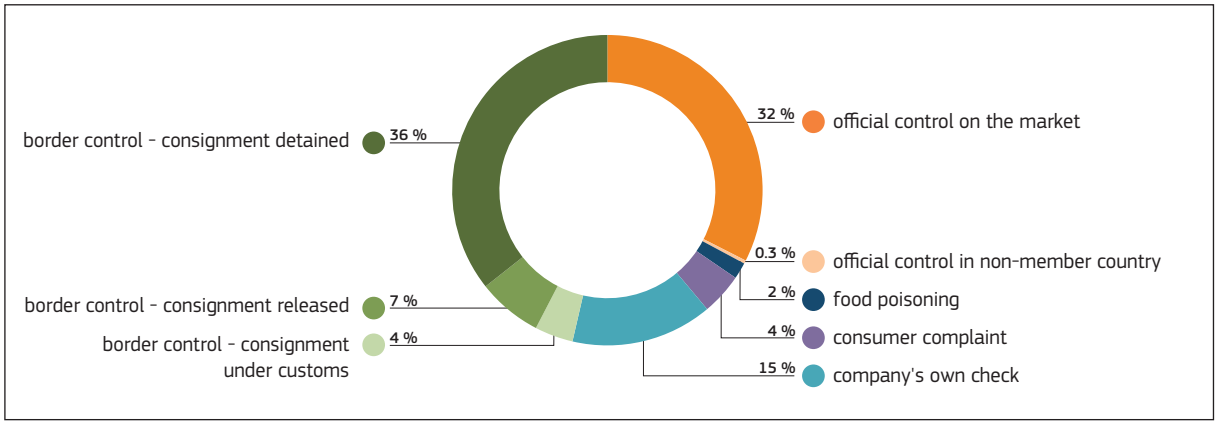
The largest category of notifications concerns official controls on the internal market [3]. Three special types of notifications are identified: when a consumer complaint, a company notifying the outcome of an own check, or a food poisoning was at the basis of the notification.



(1) Unit G5 "Alerts, Traceability and Committees"

(2) Since 2009, including Switzerland.

(3) Products placed on the market in one of the member countries including the EEA countries Norway, Liechtenstein and Iceland.



A small number of notifications are triggered by an official control in a non-member country. If a non-member country informs a RASFF member of a risk found during its official controls concerning a product that may be on the market in one of the member countries, the RASFF member may notify this to the Commission for transmission to the RASFF network. In 2016 there were three RASFF notifications and four RASFF news items reporting on checks carried out in third countries. A little context regarding some of the notifications and news items transmitted:

- Three RASFF news items related to procedures set up by non-member countries for commodities for which conditions were set for import following findings of non-compliance indicating a health risk. Updates under such RASFF news items circulate lists with authorised signatures for these certificates allowing verification of the certificate's authenticity.

- The United Kingdom sent two RASFF notifications based on information received from the US FDA on products suspected of being contaminated with *Listeria monocytogenes*: a snack product and a frozen vegetable mix, in the latter case following an outbreak in the US. In the former case, the contamination was found in a particular ingredient of the product: sunflower kernels, which led to a recall of a variety of products produced with it.

- RASFF alert 2016.1100 - Israel had informed the Commission's RASFF contact point of a suspicion of Salmonella in various hummus products produced in Israel. Information was received on the distribution of these products in several Member States but also to countries that are not members of RASFF, which were then informed by the Commission's RASFF contact point. More information, requested by RASFF members about the measures taken and analytical results, was however not obtained from the Israeli contact point.

Food poisoning

The term food poisoning, as used in this report, covers a broader spectrum of disease symptoms than the "classic" food poisoning caused by pathogenic bacteria or viruses. Also undesirable chemicals, the composition of a food supplement or insufficient labelling not mentioning an allergenic substance can be the cause of food poisoning. A food poisoning incident is called an outbreak when more than one person is affected by the same source of illness. It is called a multi-country outbreak if the symptoms reported in different geographical locations can be linked back to the same food. The RASFF does not cover all outbreaks or food poisoning incidents that occurred in the EEA in 2016. Usually only incidents that require cooperation between countries lead to a RASFF notification. It is possible that there were food poisoning incidents at the basis of a RASFF notification that were not identified as such.

In 2016, 50 notifications were identified as triggered by a food poisoning event. In addition, 4 RASFF news items were related to food poisoning events, for two of which more information is given here below. In 6 cases consumers suffered from allergic reactions due to the presence of an allergen that was not indicated on the label. Another 10 notifications could be related to elevated histamine levels in tuna. Apart from these, 29 notifications related to pathogenic micro-organisms, 10 of which related to Salmonellosis.

- **Listeria in Italian head cheese (News 16-810):** In January 2016, Italy informed the Commission about an outbreak of listeriosis with the same PFGE profile and asked for support at EU level

to identify the source. The PFGE profile matched with a strain of Listeria isolated in a marinated salmon exported from the Netherlands to Canada. In addition RASFF was informed about the death of a 79-year-old man, at the end of December 2015, after eating a sandwich with smoked salmon. However no epidemiological information linking the Italian cases with the Dutch salmon was identified.

Further investigations in Italy indicated that the food source was a type of Italian salami (coppa) locally distributed: information confirmed by human investigation, traceability investigation and tested food samples. WGS testing was conducted and confirmed that the Listeria strain isolated from the Dutch salmon did not match with the outbreak strain.

- ***Escherichia coli* (STEC 026) outbreak – Romanian cheese (2016.0312):** A multi-country outbreak of Shigatoxin-producing *Escherichia coli* (STEC) infection associated with haemolytic uraemic syndrome (**HUS**) and affecting mostly young children was reported in February and March in Romania. Overall, 25 cases of illness were associated with this outbreak; 19 persons developed HUS, three of which died. Initial suspected food: orange juice; however all testing results were negative. Romanian public health authorities requested support from ECDC, which sent an epidemiologist to Romania to support the investigation. On 16 March 2016, Romania reported in RASFF 14 HUS cases caused by STEC 0:26. A typical Romanian fresh cheese tested positive for *E. coli* 0:26 (but negative for the virulent *stx* genes) and was included within the suspected sources. Romania shared the distribution list of the suspected cheese in RASFF. On 21 March 2016 Italy reported one related 14-month-old HUS case through the Early Warning and Response System (EWRS): a link with the Romanian outbreak was suspected based on the history of food consumption, given that the child had consumed the same type of cheese. The RASFF news was upgraded to alert. On the same day that the EWRS message was issued, EFSA and ECDC decided to produce a Rapid Outbreak Assessment (ROA), which was published on 6 April 2016.

- **Salmonella outbreak associated with eggs from Poland** (RASFF news 16-824 and notifications 2016.1437, 2016.1446, 2016.1476, 2016.1653, 2016.1684, 2016.1713, 2017.0017): On 18 January 2016, Scotland launched an urgent inquiry (UI) in EPIS-FWD, reporting 21 cases of *Salmonella* Enteritidis PT8 that shared an uncommon MLVA profile (2-9-7-3-2). On 21 March, the first rapid risk assessment (RRA) on this event was published by ECDC in EPIS-FWD: no epidemiological link was made yet with a particular food source.

On 25 August 2016, the Netherlands launched another UI in EPIS-FWD reporting a new increase in cases of *Salmonella* Enteritidis characterised by the same MLVA profile 2-9-7-3-2. In the following days, Belgium, Denmark, Norway, Sweden and the United Kingdom reported recent cases with the same MLVA pattern or associated WGS profiles. Given the significant number of RASFF notifications relating to *Salmonella* Enteritidis in fresh chicken meat, the Commission requested EFSA and ECDC on 11 October to produce a ROA. Investigations in the Netherlands, Norway and the United Kingdom pointed to a weak epidemiological link to eggs and to a specific Polish establishment. The Commission asked Member States to share the information on food investigations in the RASFF.

On 14 October, RASFF news 16-824 was issued by the Netherlands with information on their national epidemiological and food/traceability investigation. The Dutch public health investigation identified eggs as the suspected source. The traceability investigation pointed to one common wholesaler and a packing centre in the Netherlands supplied by three Dutch farms and one packing centre in Poland. Preliminary tests of egg samples collected in the packing centre in the Netherlands were positive for *Salmonella* Enteritidis. Cases of the outbreak in Scotland could be linked to eggs from the same packing centre in Poland. Molecular analysis of a *Salmonella* Enteritidis isolate from samples collected in 2015 in Norway from eggs originating from the same Polish packing centre revealed that it concerned the same strain as the human cases.

On 19 October, Croatia notified through RASFF 5 new cases in the same family leading to the death of a 5-year-old child. The remaining eggs from the family household were positive for *Salmonella* Enteritidis. Tracing back the eggs, they were found to have originated from the same packing centre in Poland. On that same day, Poland informed that eggs originating from the packing centre in Poland were distributed to Belgium, Croatia, France, Germany and the United Kingdom.

On 20 October, Poland informed through RASFF that their competent authority took samples at the packing centre in Poland: swabs from surfaces in the production area, faeces and eggs samples originating from 10 farms belonging to the same operator. The distribution of table eggs was halted. Poland and the other countries concerned started withdrawing the eggs from the market. The Polish competent authority further investigated the incident in the concerned establishments and farms and implemented control measures at national level to better control Salmonella.

The EFSA-ECDC ROA was published on 27 October 2016 and later updated on 7 March 2017.

- **Clostridium botulinum type E in chilled dried salted common roach (Rutilus rutilus) from Lithuania and the Netherlands, with raw material from Poland** (2016.1621)**:** After initial messages on the EPIS platform of the ECDC, Germany transmitted a RASFF alert on 25 November on a food poisoning caused by Clostridium botulinum type E, believed to have been caused by the consumption of dried salted roach. Spain reported that it had identified another 2 cases. On 28 November 2016, Germany posted an alert in EWRS. Overall five cases were identified in Germany and Spain. On 1 December 2016, EFSA and ECDC decided to produce a ROA, which was published on 20 December 2016. The product was quickly identified and traced to a producer in the Netherlands on the one hand and another producer in Lithuania and was withdrawn from the market. Nevertheless, much later, in May 2017, another case of botulism surfaced in a person having eaten a similar product in Germany that could be traced back to the same operator in Lithuania, although there was conflicting information casting doubt on the correctness of the origin, the investigation being hindered by the bankruptcy of the operator in Lithuania.

RASFF notifications in 2016

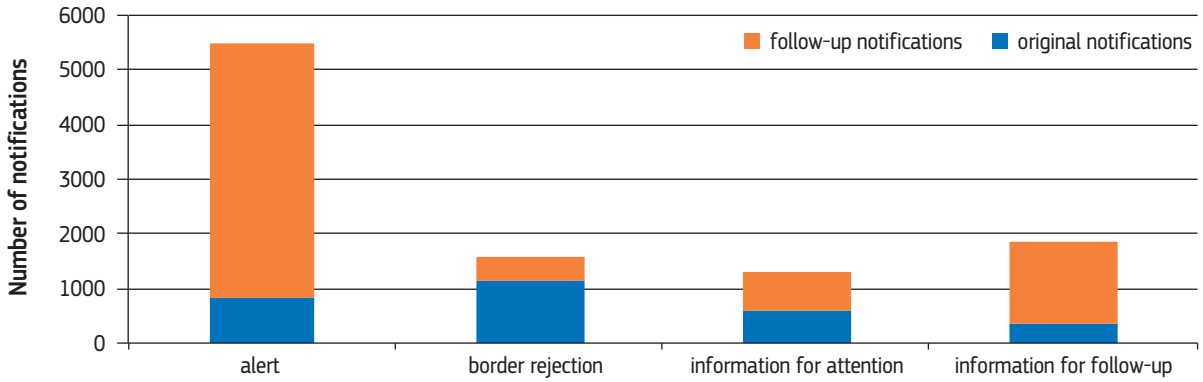
Overall

In 2016, a total of 2993 **original notifications** were transmitted through the RASFF, of which 28% (n=847) were classified as alert, 13% (n=378) as information for follow-up, 20% (n=598) as information for attention and 39% (n=1170) as border rejection notification. These original notifications gave rise to 7288 **follow-up notifications**, representing an average of 2.4 follow-ups per original notification. For alert notifications, this average rises to an impressive 5.5 follow-ups per original notification.

The overall figures present a 1.8% decrease in original notifications compared to 2015 but a 17.5% increase in follow-up notifications, resulting in an overall increase of 11.1%.

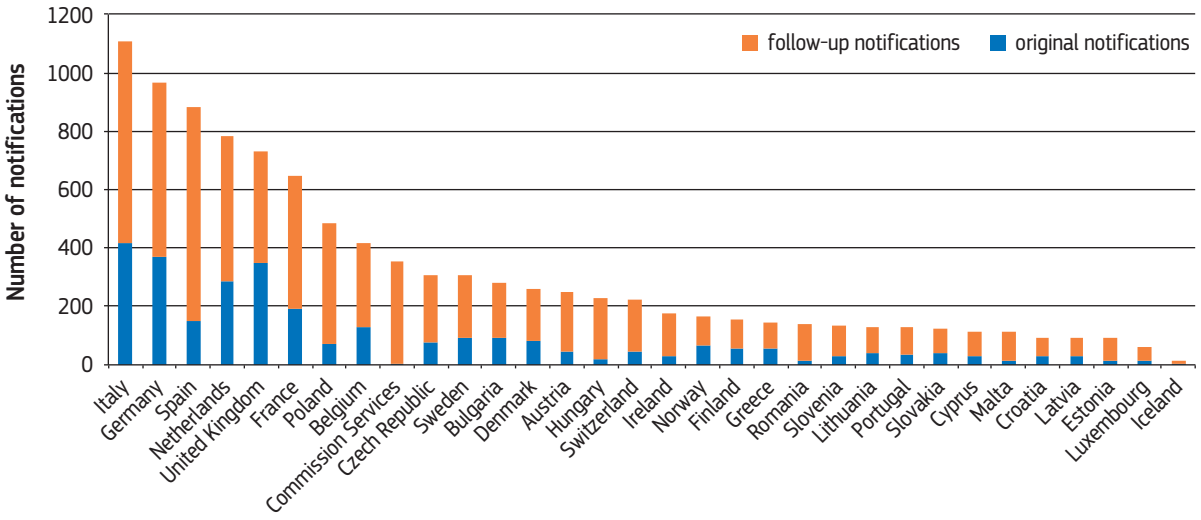
For original notifications, the focus continues to shift to alert notifications. Compared to 2015, the number of alert notifications, implying a serious health risk of a product circulating on the market, rose by 9% with 16% more follow-ups transmitted. The increase in alerts (both follow-ups and original notifications) is significant for the last consecutive three years, contrasting with decreasing numbers in other notification categories. This demonstrates that members of the network are progressively focusing their efforts on cases where serious risks with products placed on the market require rapid action to be taken, thereby increasing the efficiency of the network.

RASFF notifications by class and type in 2016



RASFF notifications by notifying country in 2016

Original and follow-up notifications by notifying country in 2016



The RASFF news items transmitted internally in the network are not counted in the above figures nor represented in the charts in this report. There have been 20 RASFF news items sent together with 163 follow-ups.

After receipt of follow-up information, 29 alert, 32 information and 11 border rejection notifications were withdrawn. Notifications that were withdrawn are further excluded from statistics and charts.

The European Commission decided, after consulting the notifying countries, not to upload 205 notifications onto the system because, after evaluation, they were found not to satisfy the criteria for a RASFF notification (rejected notifications). This represents a 130% increase compared to 2015. This can be explained through the application of the new RASFF working instruction 2.2. on the "Calculation of consumer intake and evaluation of the risk for pesticide residues", which caused the Commission's contact point to propose rejection of a much higher number of notifications on pesticide residues.

Top 10 number of notifications by notifying country

Number of notifications counted for each combination of hazard/product category/notifying country

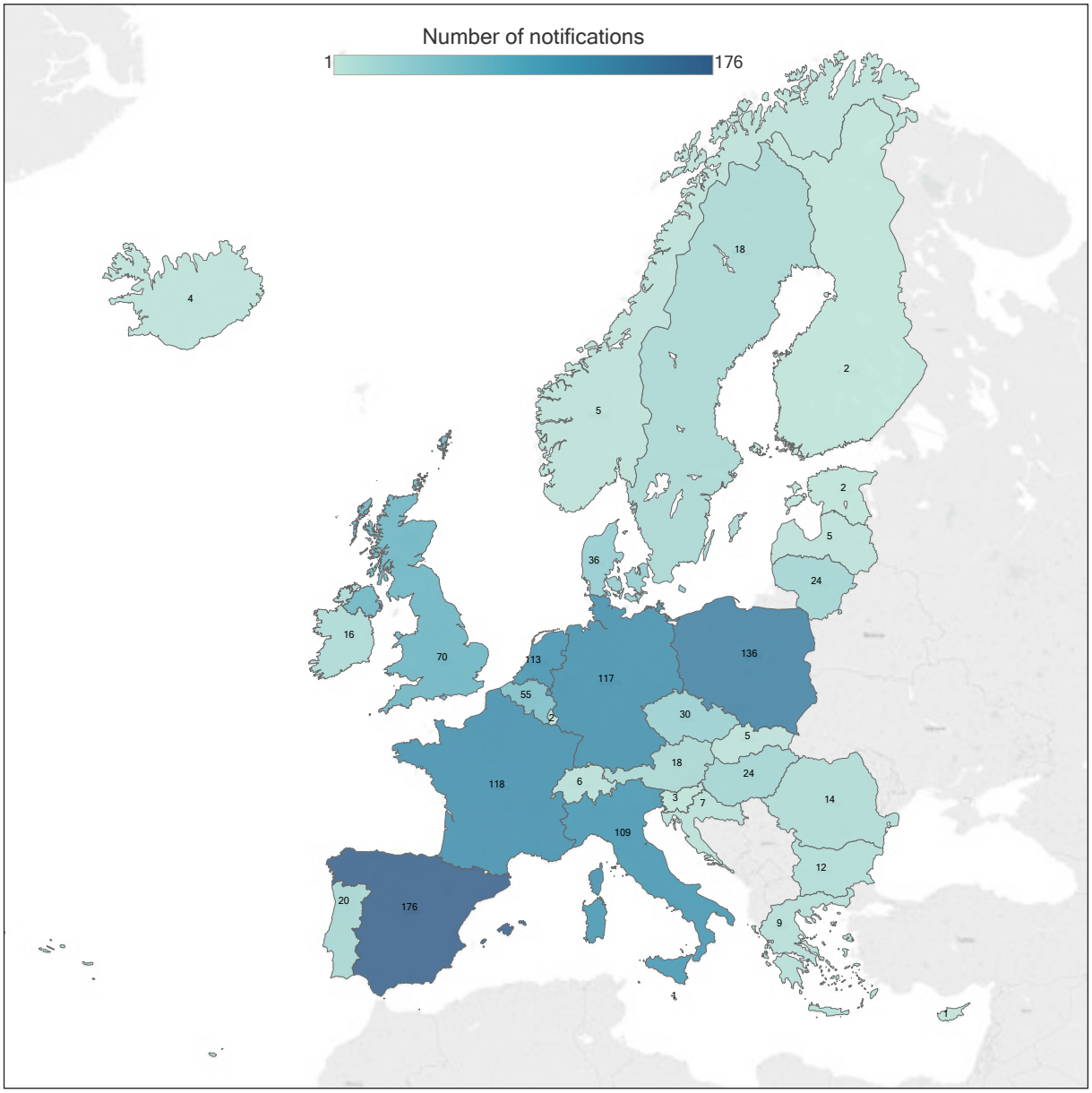
hazard	product category	notifying country	notifications
pesticide residues	fruits and vegetables	Bulgaria	71
aflatoxins	nuts, nut products and seeds	Germany	65
aflatoxins	nuts, nut products and seeds	Netherlands	63
mercury	fish and fish products	Italy	59
aflatoxins	nuts, nut products and seeds	Italy	52
Salmonella	fruits and vegetables	United Kingdom	48
aflatoxins	nuts, nut products and seeds	United Kingdom	31
Salmonella	poultry meat and poultry meat products	Netherlands	29
too high count of Escherichia coli	bivalve molluscs and products thereof	Italy	28
high content of caffeine	dietetic foods, food supplements, fortified foods	Germany	24
pesticide residues	fruits and vegetables	Netherlands	24

Country fact sheets

The country fact sheets available online for RASFF member countries give a picture of their activity in the RASFF. The fact sheets give an overview of the origin and distribution of products notified by the country in question and what product categories, hazard categories and notification types were most notified in the year 2016.

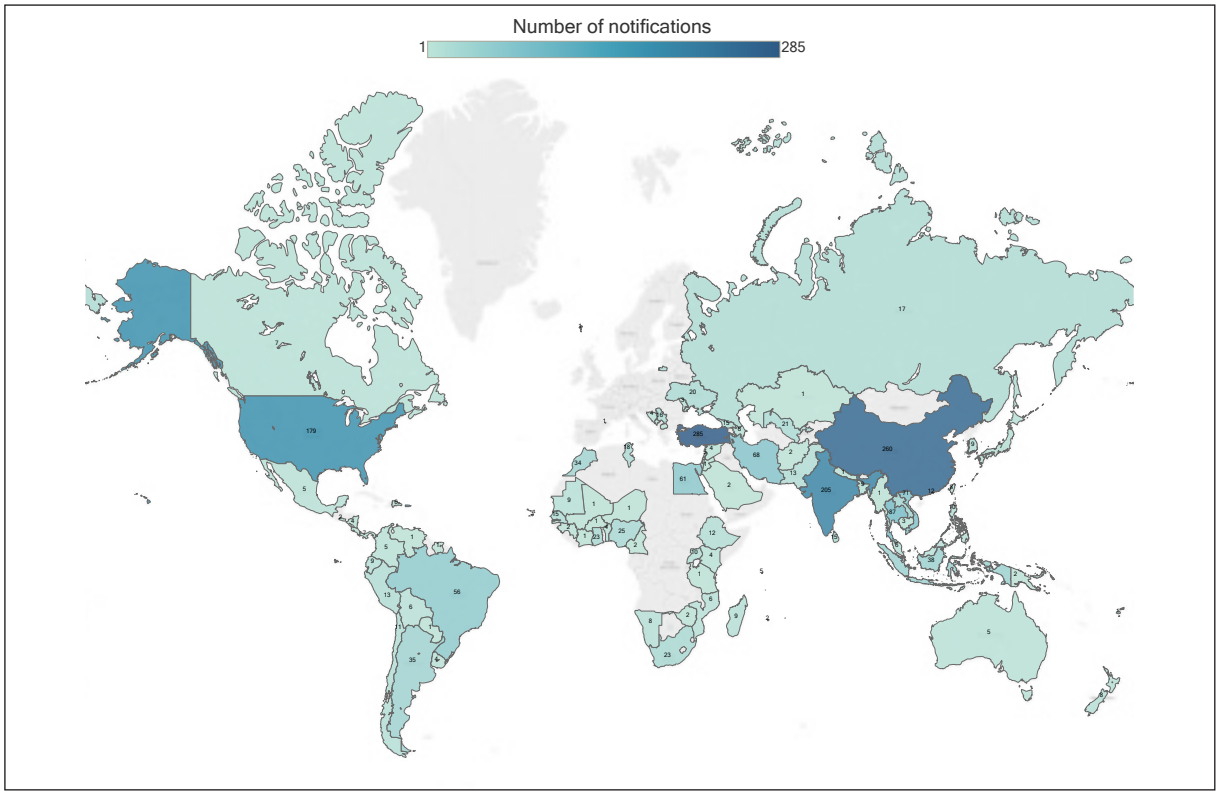
RASFF notifications by country of origin in 2016

Origin member countries in 2016 (4)



(4) Member countries of RASFF identified as the origin of the product notified, expressed in number of notifications per country of origin.

Origin non-member countries in 2016



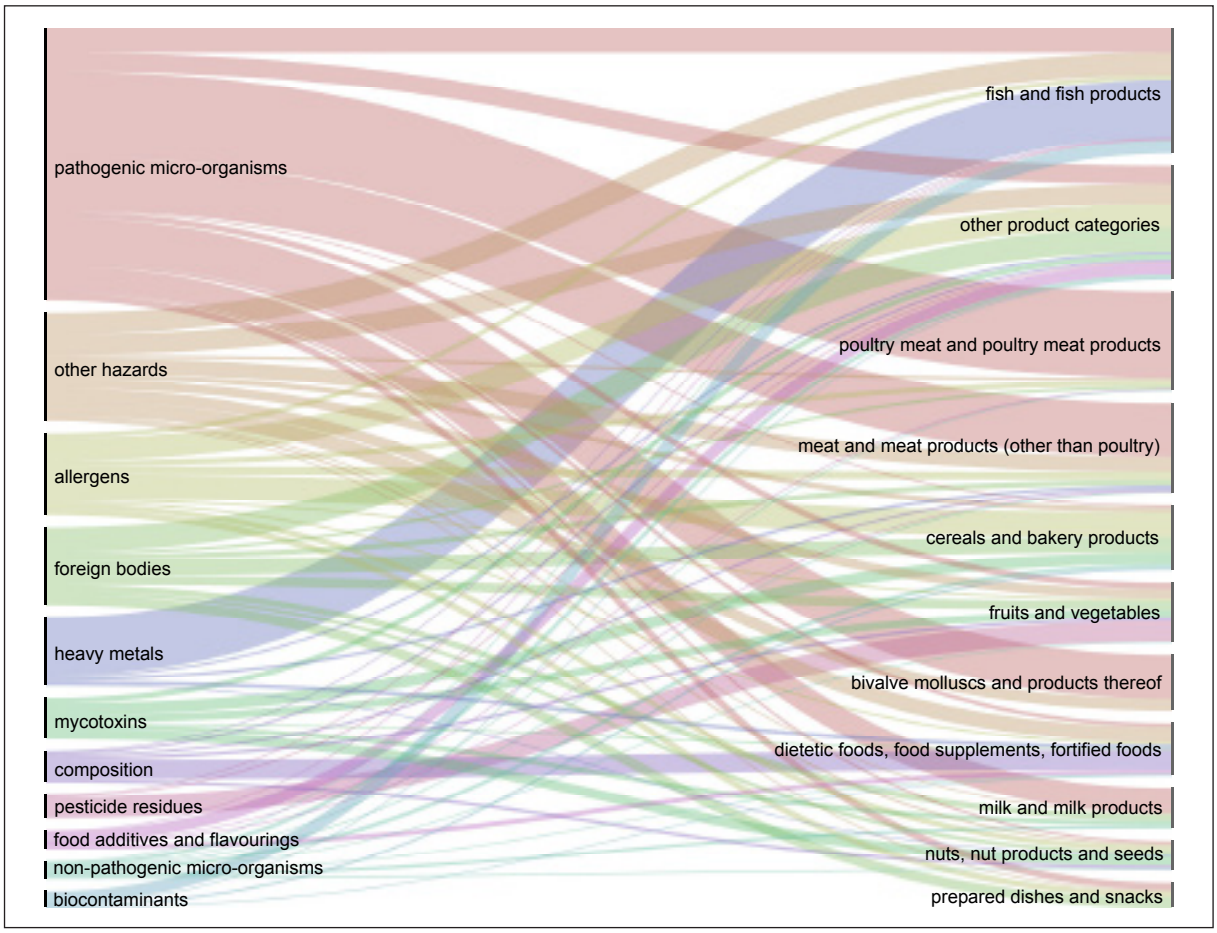
Top 10 number of notifications by country of origin

Number of notifications counted for each combination of hazard/product category/country

hazard	product category	origin	notifications
pesticide residues	fruits and vegetables	Turkey	77
aflatoxins	nuts, nut products and seeds	Turkey	68
mercury	fish and fish products	Spain	62
aflatoxins	nuts, nut products and seeds	Iran	56
aflatoxins	nuts, nut products and seeds	China	50
aflatoxins	nuts, nut products and seeds	United States	45
Salmonella	fruits and vegetables	India	46
aflatoxins	fruits and vegetables	Turkey	40
aflatoxins	nuts, nut products and seeds	Egypt	33
aflatoxins	herbs and spices	India	33

In the following sections, using Sankey diagrams, the most frequently reported hazard and product categories are analysed for food, feed and food contact materials separately. The "top" hazard categories are looked into in more detail, while identifying recurrent issues (more than 10 notifications) and operators (operators that were notified in RASFF three times or more in a three-month period).

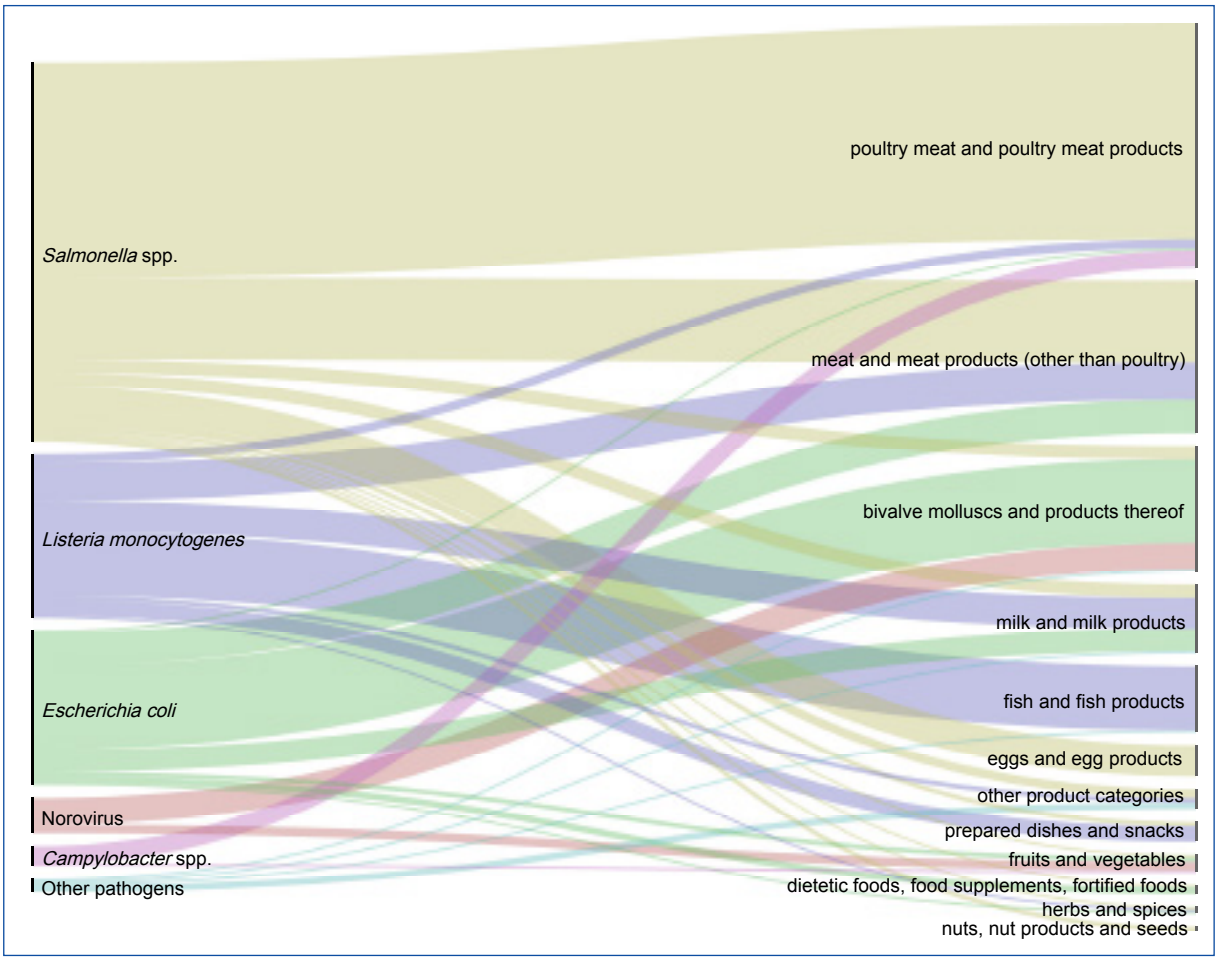
2016 top 10 hazard and product categories on food products originating from member countries



Pathogenic microorganisms

352 notifications

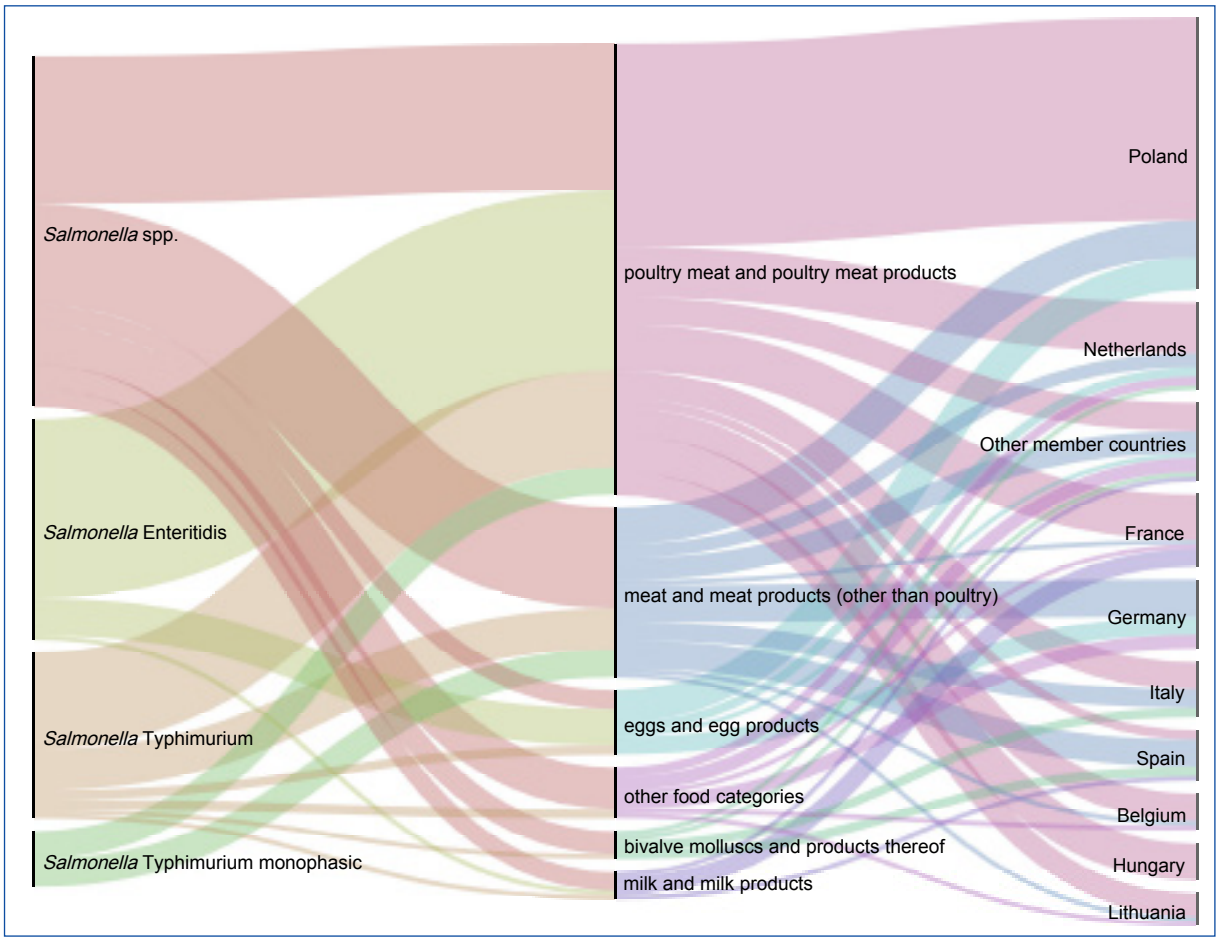
The Sankey diagram above shows that a significant part of the RASFF notifications on products from member countries concern pathogenic micro-organisms in food of animal origin mostly. The diagram below provides more detail about this.



Salmonella

Salmonella remains the most frequently reported pathogen in food from member countries (170 notifications) but the same goes for non-member countries (172 notifications, see later in this report). Meat is taking up the bulk of the notifications but also some notifications were made for egg products with *Salmonella* Enteritidis in particular. As clearly showcased in the food poisoning section of this report, eggs were also in 2016 an important cause for foodborne outbreak.

***Salmonella* serotypes reported in 2016, set out against food product category set out against country of origin**



This diagram shows that many of the notifications report on non-compliances of fresh poultry with the food safety criteria for *Salmonella* Enteritidis and *Salmonella* Typhimurium.

Recurrent notifications:

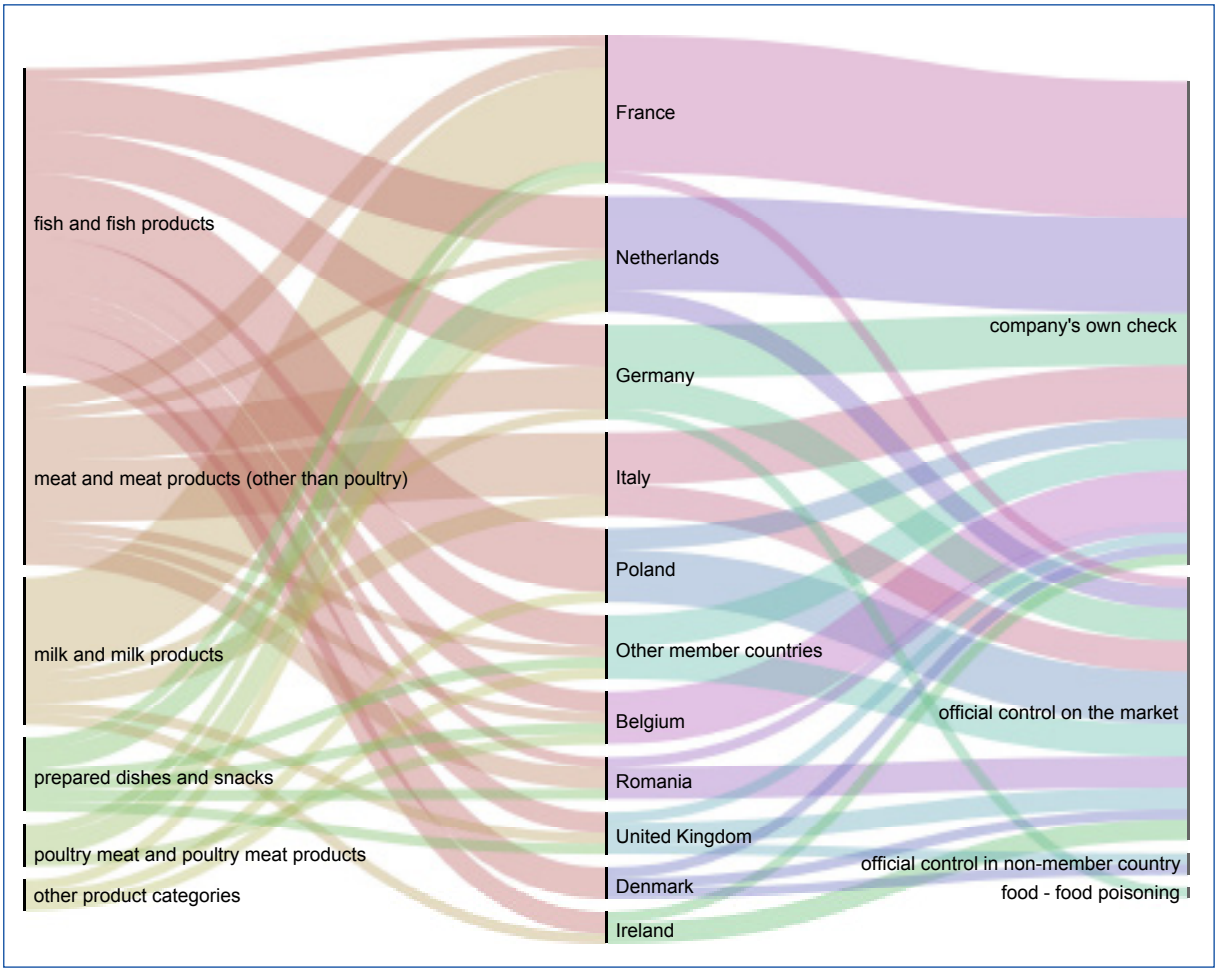
There were 40 notifications on *Salmonella* in products originating from Poland, mainly on poultry products (30), most often concerning *Salmonella* Enteritidis in fresh poultry. Three operators were identified as recurrent.

Listeria monocytogenes

The Sankey diagram below shows that fish was most frequently notified for *Listeria monocytogenes* contamination. The fish in question is predominantly smoked salmon. Other smoked fish products are also notified, such as smoked trout. But smoked fish is not the reason why France is the most frequently notified country for *Listeria monocytogenes*. The main reason for this are companies' own checks on cheeses (9 notifications). Even if several countries notified, the original findings in each case went back to the own-checks of the producer in France and subsequent withdrawal. The products involved are often cheeses made from raw milk.

The diagram also demonstrates that companies' own checks are most often the trigger for *Listeria monocytogenes* notifications, not only for cheese. The second most often notified product category is meat and meat products other than poultry. Regulation 2073/2005 sets a food safety criterion for ready-to-eat products; therefore raw foods requiring cooking are usually not notified.

***Listeria monocytogenes* notifications in 2016 by food product category, set out against member country of origin, set out against notification basis**



Recurrent notifications: none

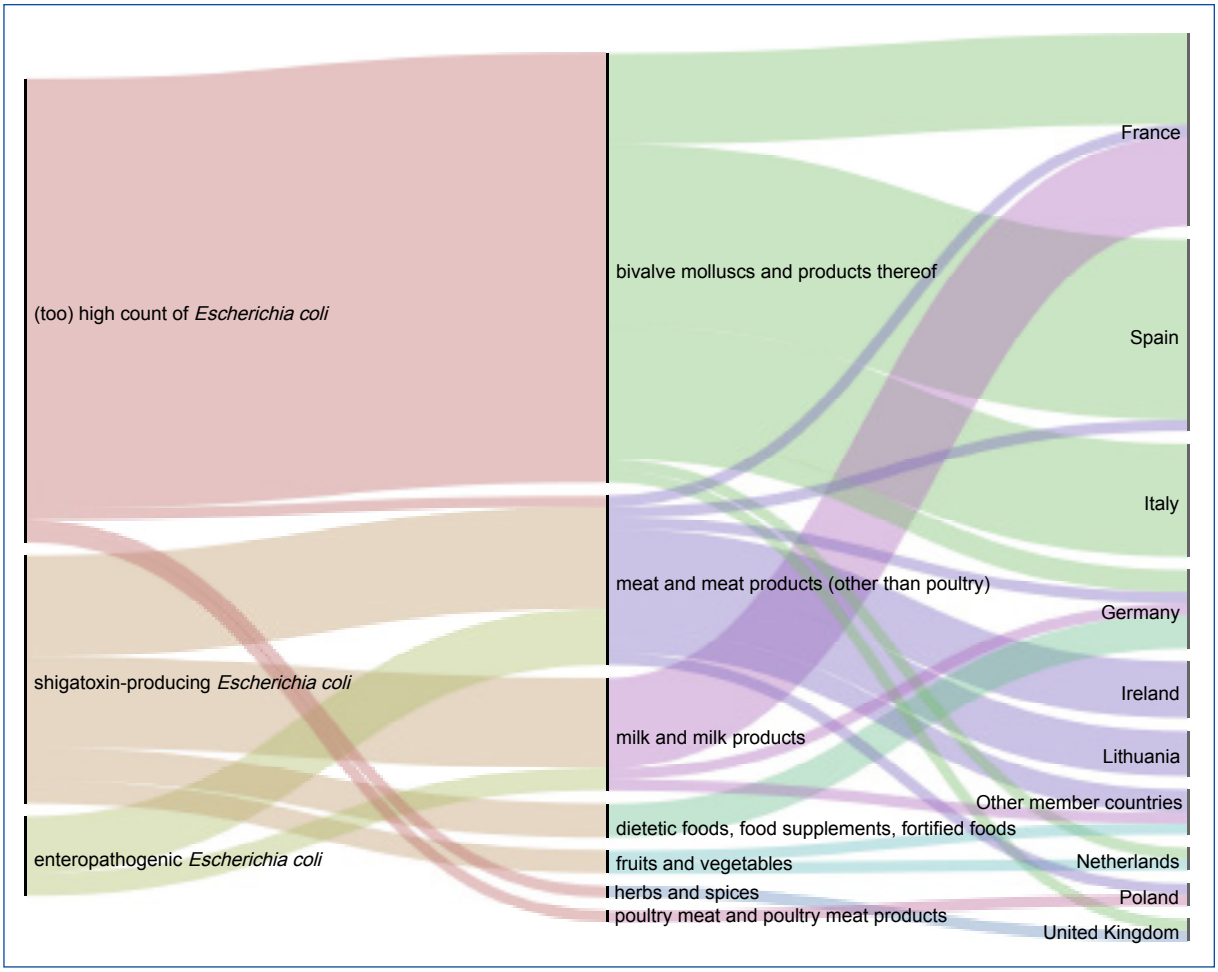
Escherichia coli

The Sankey diagram below provides an insight into *Escherichia coli* notifications in RASFF in 2016. The top type of notification for (mainly) too high count of *Escherichia coli* is related to the food safety criterion for live bivalve molluscs of 230 MPN/100g. Apart from the recurrent mussels from Spain (see below), also mussels and clams from Italy and mussels, clams and oysters from France were concerned.

Shigatoxin-producing *Escherichia coli* can cause foodborne illness because of its capacity to produce toxins. As the capacity of the strain to really cause illness depends on a lot of factors, it is usually not straight forward to estimate the risk a contamination poses to health. The contamination is of animal or human origin and therefore is most often found on (non-heat treated) meat products and cheeses. See the food poisoning chapter on a dramatic outbreak with a traditional cheese product from Romania.

Enteropathogenic *Escherichia coli* are strains that lack the genes to produce shigatoxins but have genes that code for their ability to attach to the bowel and cause damage to it.

Escherichia coli notifications in 2016, set out against food product category set out against member country of origin



Recurrent notifications:

Early in the year, between February and March, there were repeated (13) notifications on a too high count of *Escherichia coli* in live mussels from Spain, all notified by Italy. There were two recurrent operators.

Norovirus

There were 14 notifications concerning norovirus, 11 of which reported norovirus in live oysters from France, with one recurrent operator.

Campylobacter

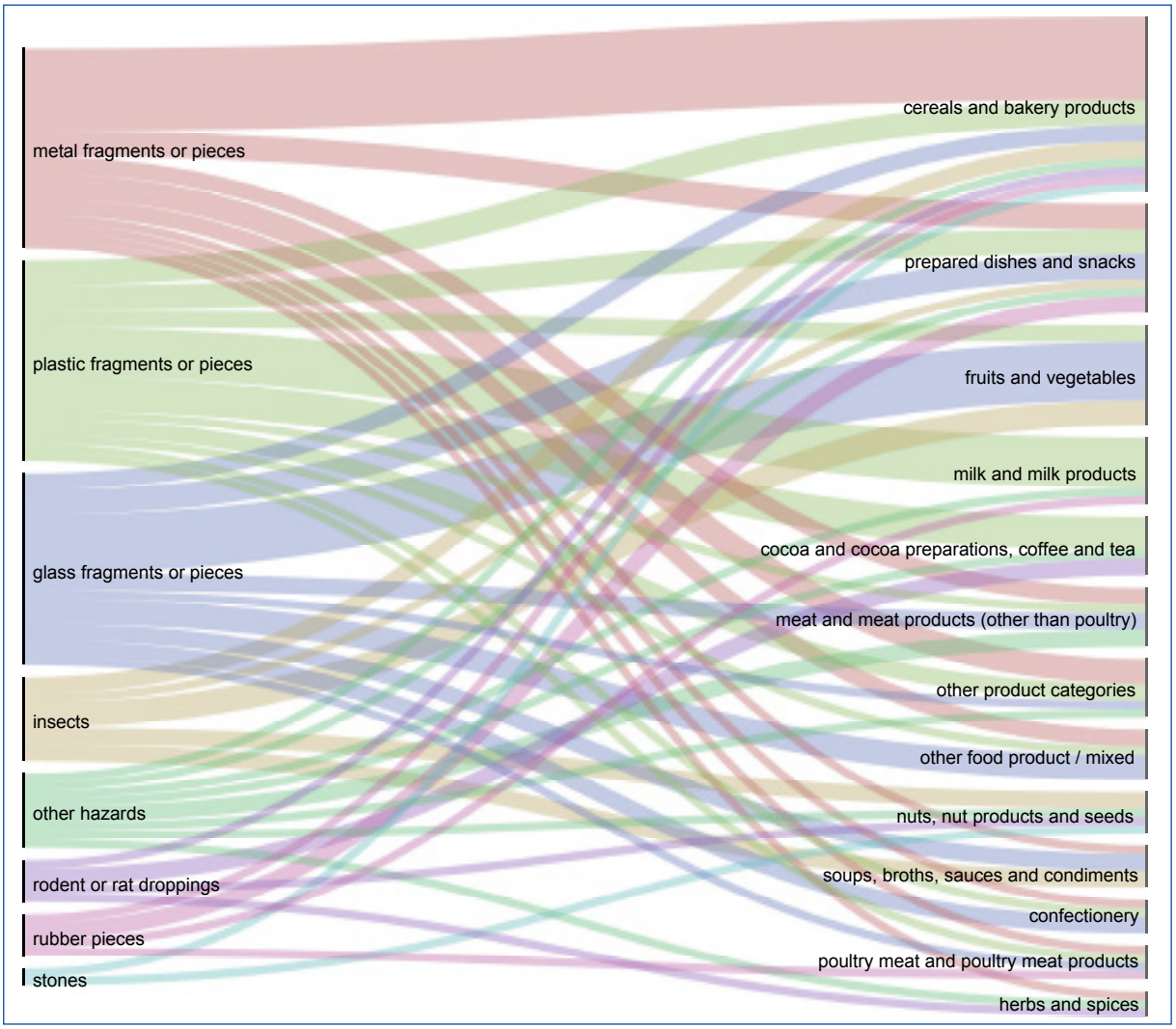
Denmark notified 9 times on the presence of Campylobacter, mostly in fresh chicken and one time in rucola from Italy.

Foreign bodies

106 notifications

The three most frequently notified types of foreign bodies are metal, plastic and glass. Such hard materials found in food (most often reported through consumer complaints) pose a risk due to injury of the digestive tract. They are typically found in ground or bulk raw materials such as cereals or flours or in processed foods due to a contamination during production. Glass fragments are often found in products packaged in glass, where damage to the jars at some stage has led to contamination.

Types of foreign bodies set out against food product category



Allergens

107 notifications

Milk, soya, nuts and gluten are the most commonly reported allergens. Cereals and bakery products are the most often notified, in particular by Germany, reporting on products of German origin to a large extent. Not all allergen issues are harmonised in EU legislation. Quite often, traces of allergens are notified, which occur in foods due to cross-contamination e.g. on the same production lines as other products containing allergens. Such occurrence of allergens is not regulated on EU level.

Allergens in 2016, set out against food product category set out against member country of origin

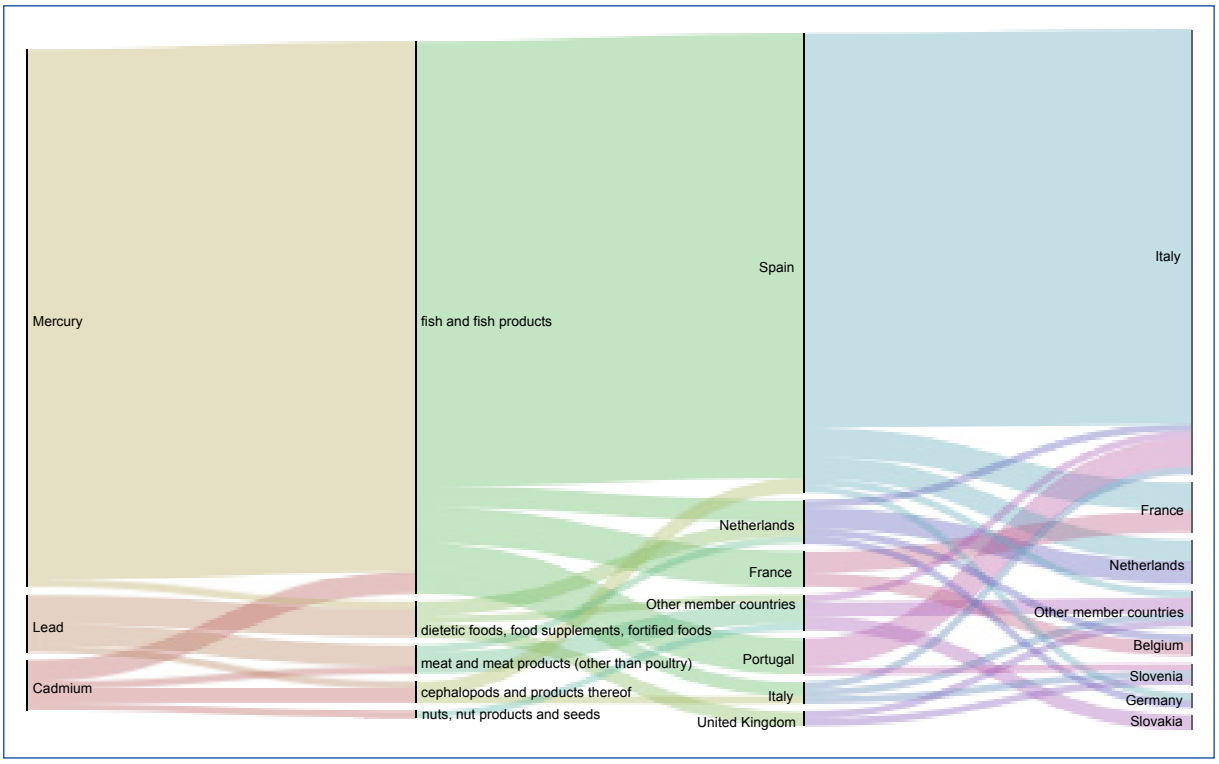
By the way, don't read the Sankey diagram wrongly: a relationship is only demonstrated between two sides, not throughout the whole diagram. For example, above we can see that milk is an often occurring allergen in cereals and bakery products and that a good fraction of the allergen issues in cereals and bakery products concern German products. However, it would be wrong to conclude that there are many issues regarding milk allergen in cereals and bakery products from Germany! In fact, there are none; but also that you cannot read from the diagram.

Heavy metals

88 notifications

The diagram on heavy metals shows that the issue is dominated by the findings of mercury in fish, mostly from Spain and predominantly notified by Italy (see recurrent notifications below). Apart from mercury, also lead and cadmium are harmful heavy metals, with maximum limits firmly set in EU legislation.

Heavy metals in 2016, set out against food product category, set out against member country of origin set out against notifying country



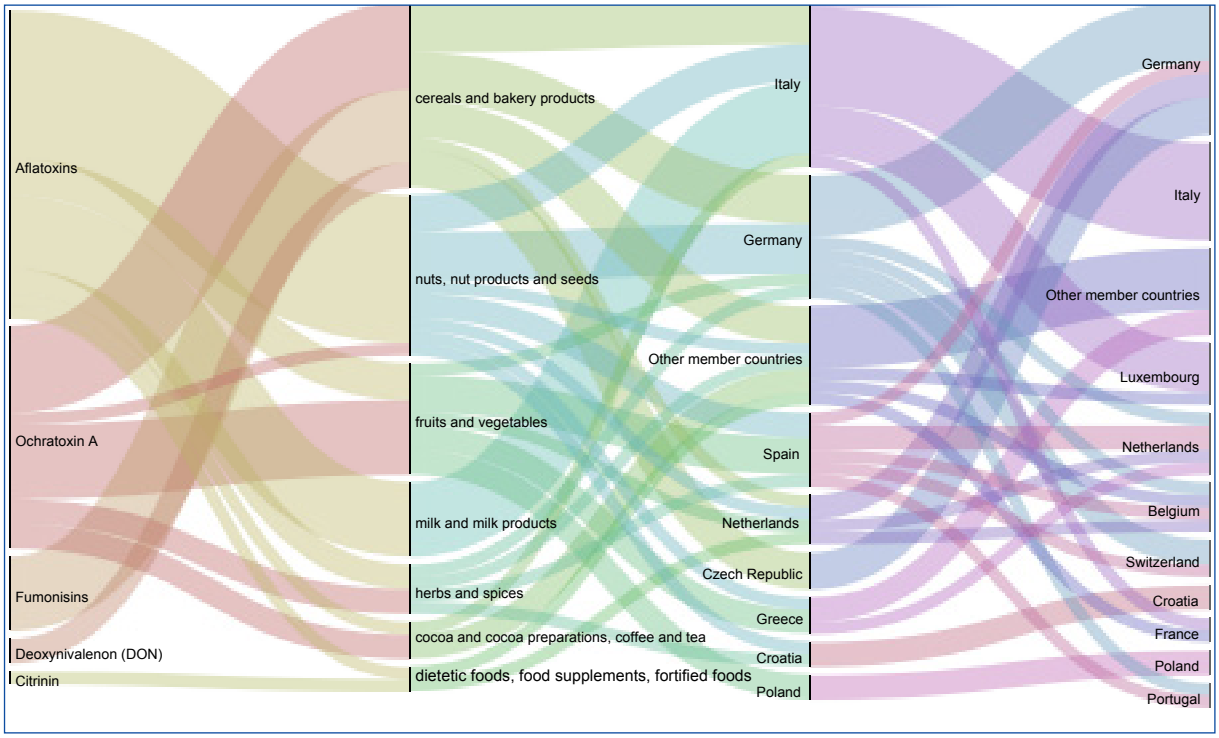
Recurrent notifications

Mercury in swordfish is the most recurrent issue with 58 notifications, of which 45 notified by Italy on swordfish of Spanish origin. Of these 45 notifications, 21 relate to the involvement of recurrent operators.

Mycotoxins

53 notifications

Mycotoxin types in 2016, set out against food product category, set out against member country of origin, set out against notifying country



Mycotoxins are toxins that are formed by moulds that grow in or on foods. Typically, foods with a low water activity (dry or dried foods) are susceptible. In products from member countries, apart from aflatoxins, ochratoxin A is frequently reported, albeit in different types of products.

Aflatoxins

Aflatoxins are typically found in nuts. Often it concerns nut products where the nuts were imported from outside the EU and then processed in the EU. Apart from nuts, aflatoxin M1 levels above the legal maximum have been reported 6 times by Italy on milk products from Italian origin.

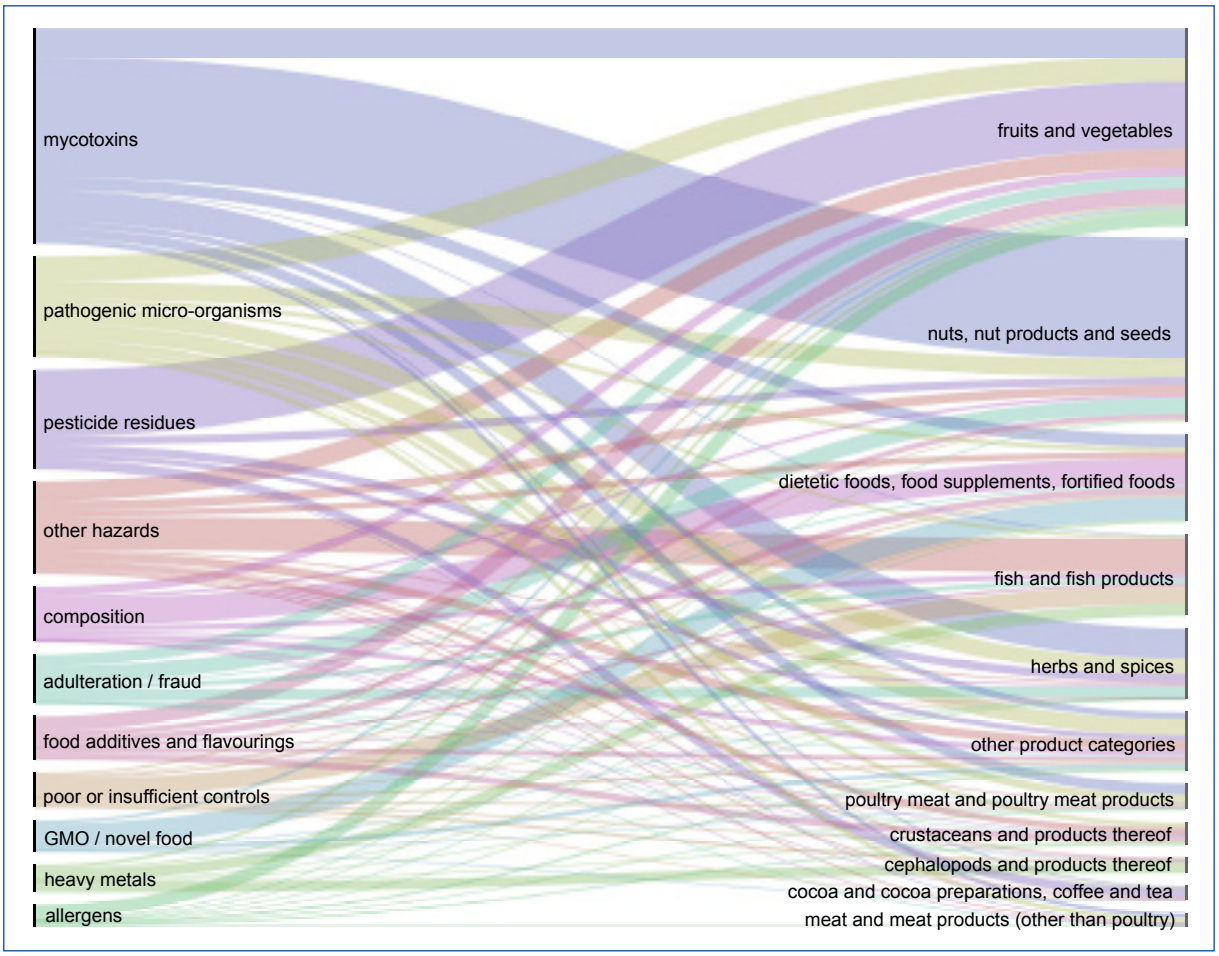
Ochratoxin A

Ochratoxin A is a not confirmed genotoxic carcinogen unlike e.g. aflatoxin B1, which is confirmed as such. Therefore, exceeding the legal limit moderately will be less critical to health than for aflatoxins. In 2016, ochratoxin A was mainly reported in RASFF in dried fruits such as raisins, currants or dried figs and in cereal-based products. Although it is also known to occur in coffee, there were only two such notifications.

Fumonisins

Growth of Fusarium moulds is usually associated with cereal products. The toxins formed are called fumonisins. Due to their relatively lower toxicity, the legal limits for these toxins are significantly higher than for other mycotoxins. Out of the six notifications on fumonisins, five concerned maize products: four from Italy and one from Portugal; all five were notified by Luxembourg.

2016 top 10 food hazard and product categories on notified products from non-member countries

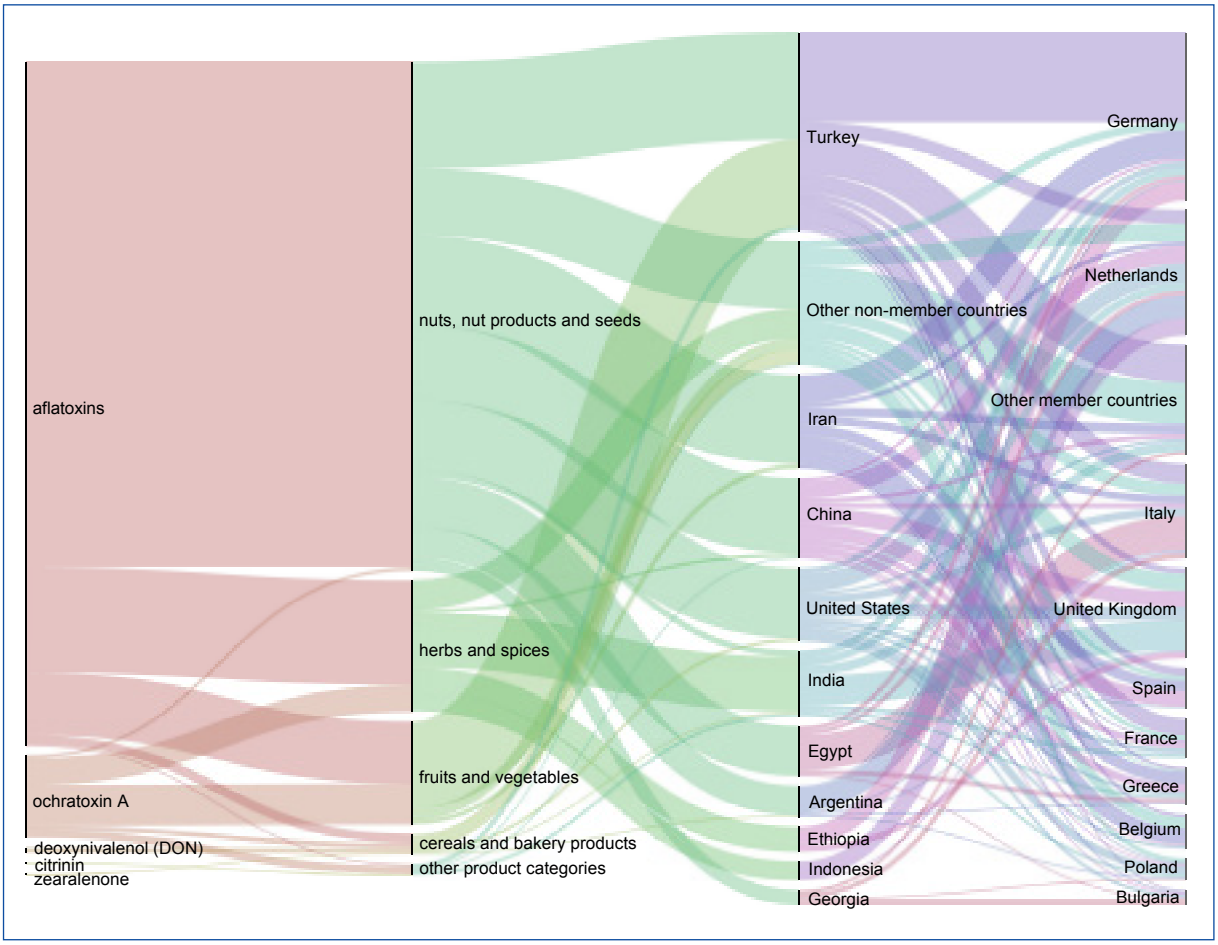


Mycotoxins

489 notifications

For food from non-member countries, we see a very different order in the top 10 of notified issues. Since many years, here mycotoxins take the lion's share.

Mycotoxin types in 2016, set out against food product category, set out against non-member country of origin set out against notifying country



Aflatoxins

Aflatoxins are predominantly notified in nuts and nut products. Recurrent notifications are:

- Pistachio nuts from Iran – 56 notifications (of which 49 border rejections)
- Groundnuts from China – 49 notifications (of which 48 border rejections)
- Hazelnuts from Turkey – 33 notifications (of which 30 border rejections)
- Groundnuts from Egypt – 33 notifications (of which 30 border rejections)
- Groundnuts from the United States – 27 notifications (of which 25 border rejections)
- Pistachio nuts from Turkey – 25 notifications (of which 24 border rejections)
- Groundnuts from Argentina – 19 notifications (of which 18 border rejections)
- Pistachio nuts from the United States – 14 notifications (of which 11 border rejections)

Other recurrent notifications regarding aflatoxins:

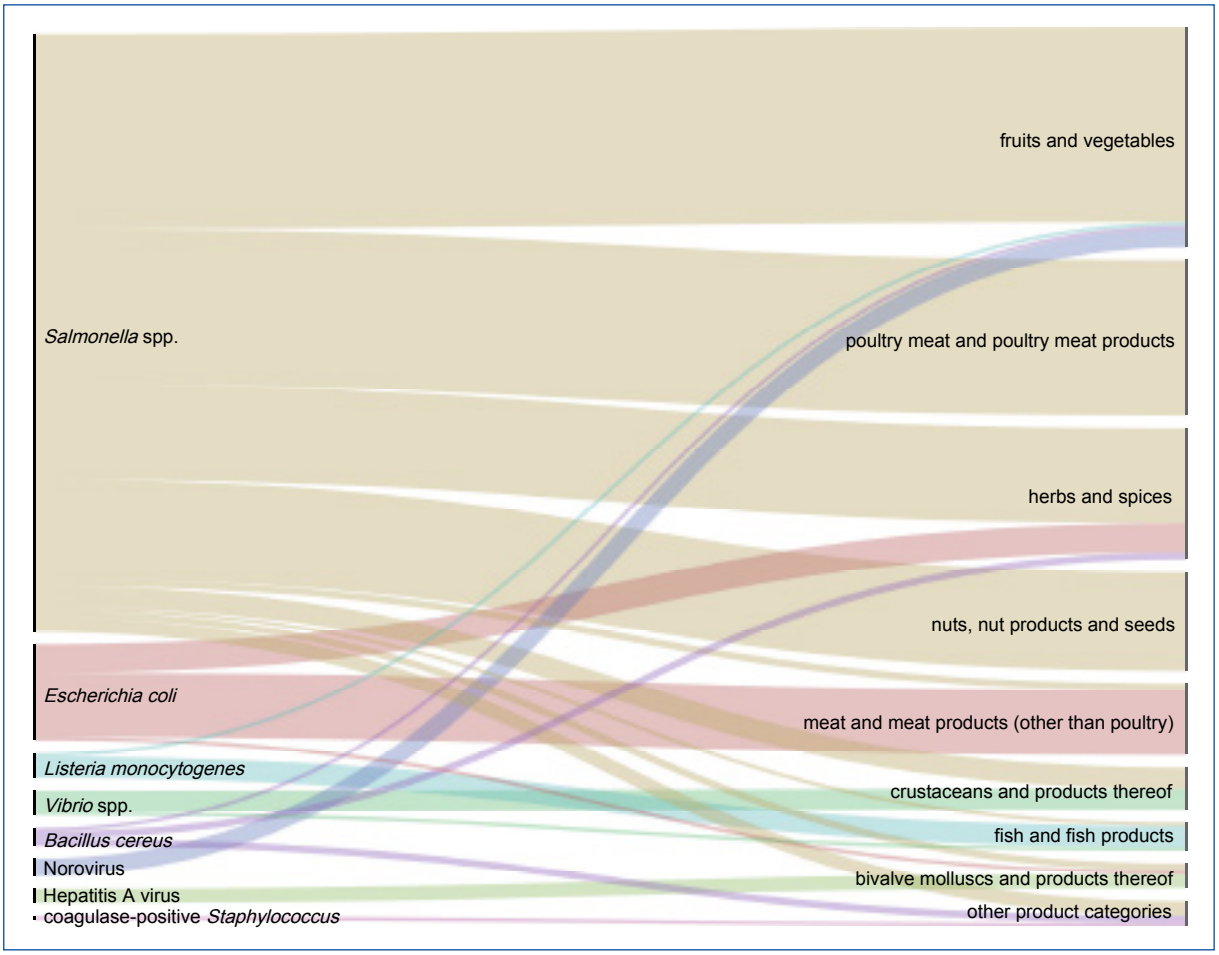
- Dried figs from Turkey – 42 notifications (of which 39 border rejections)
- Chilli peppers from India – 28 notifications (of which 26 border rejections)
- Nutmeg from Indonesia – 12 notifications (of which 11 border rejections)
- Spice mixes from Ethiopia – 10 notifications (of which 4 border rejections)

Ochratoxin A

Ochratoxin A was reported in various dried fruits, mainly in raisins, but also in dried apricots, currants and figs from various origins. It was also frequently notified in various spices such as chilli, nutmeg, paprika or spice mixes.

Pathogenic microorganisms

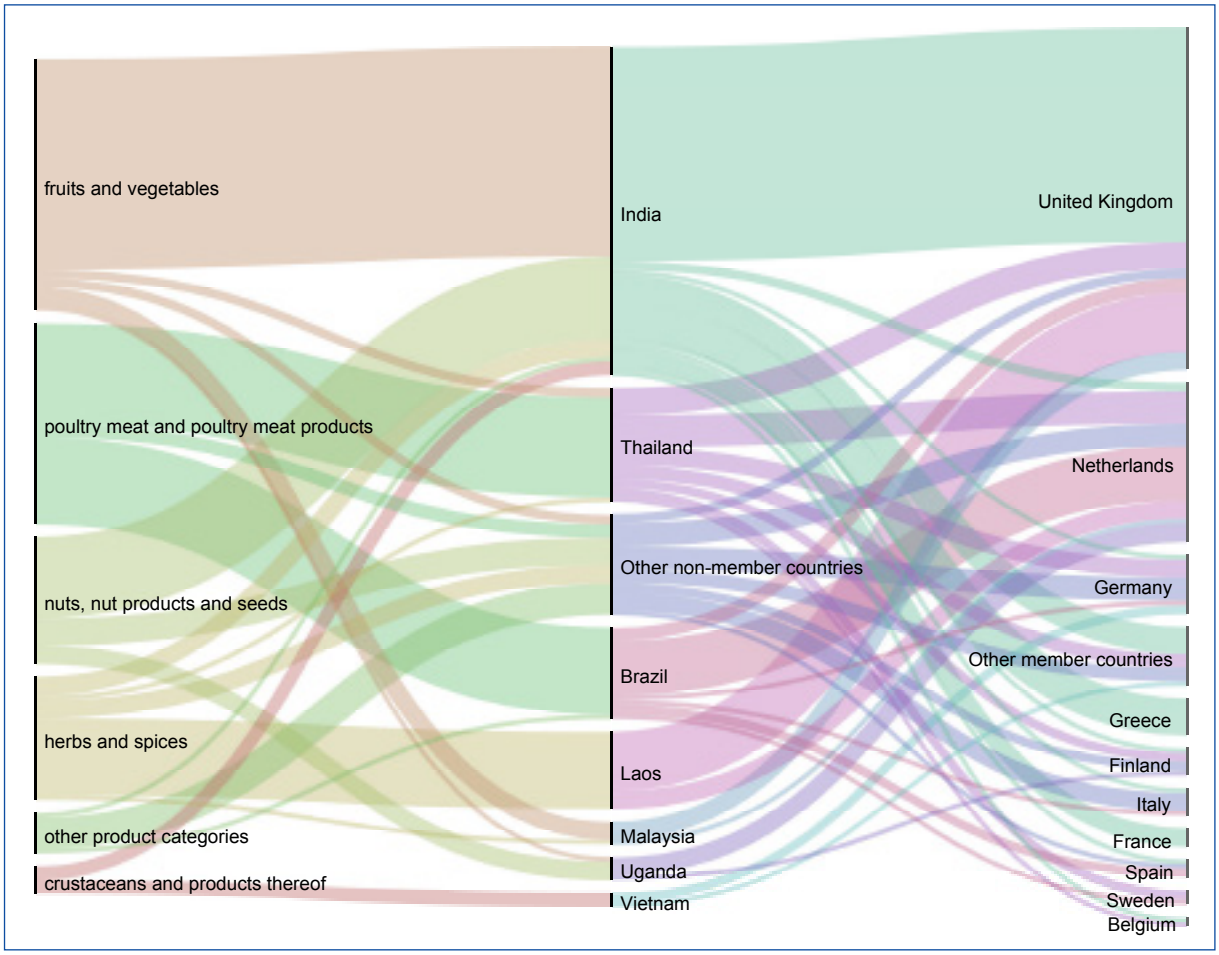
231 notifications



Pathogen reporting for food from non-member countries is even more dominated by *Salmonella* findings than for member countries. Here however, *Salmonella* is not only reported in food of animal origin. The next Sankey diagram provides detail of the *Salmonella* notifications for food from non-member countries.

Salmonella

Food product categories for *Salmonella* notifications, set out against non-member country of origin set out against notifying country



Recurrent notifications are:

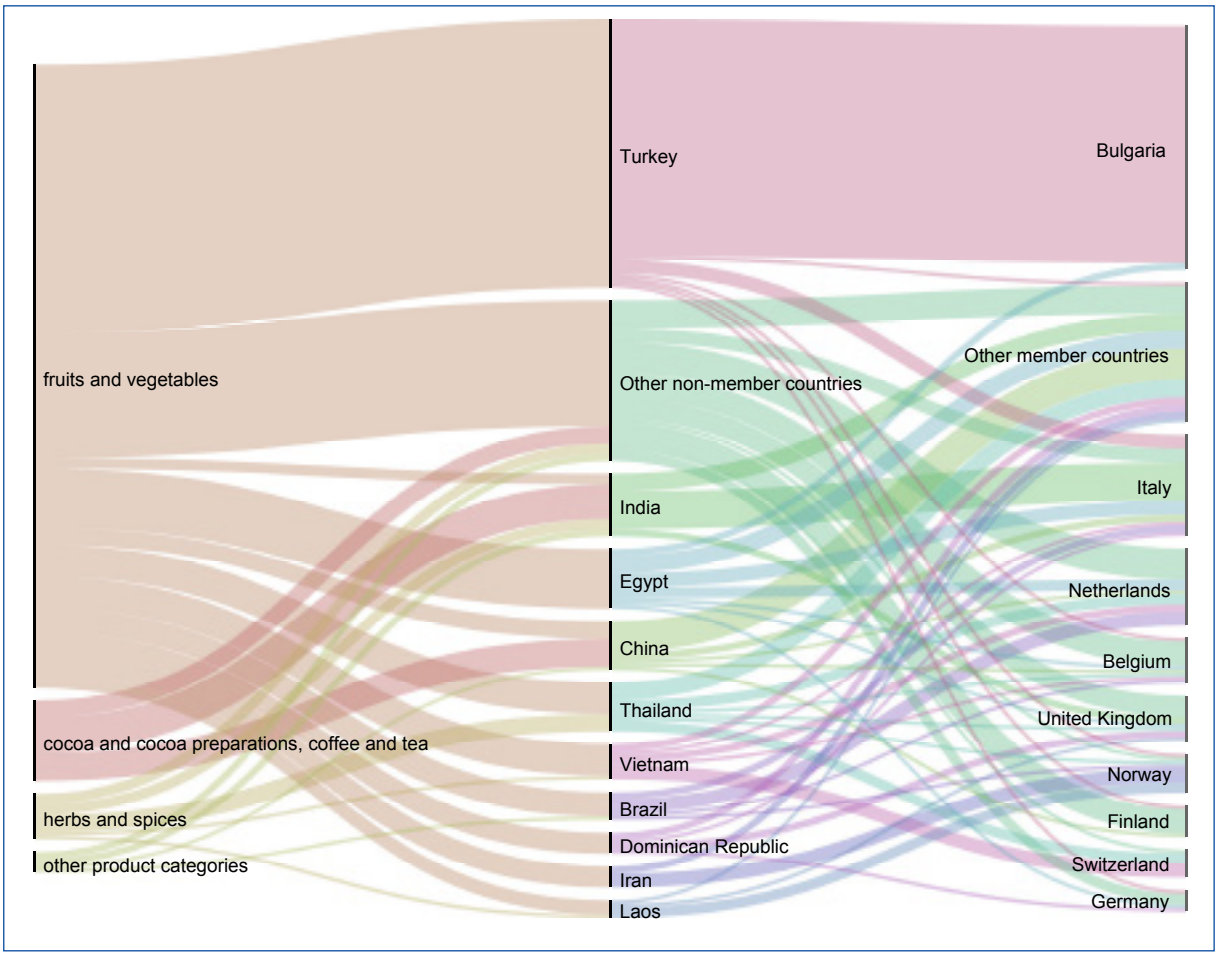
- Betel leaves from India – 45 notifications (all of which border rejections), mostly notified by the United Kingdom
- Chicken meat from Thailand – 22 notifications (of which 15 border rejections)
- Turkey (mainly) and chicken meat from Brazil – 19 notifications (of which 17 border rejections), mainly notified by the Netherlands
- Sesame seeds from India – 18 notifications (all of which are border rejections)
- Fresh herbs and vegetables from Laos – 18 notifications (of which 5 border rejections), mainly notified by the United Kingdom

Pesticide residues

222 notifications

Obviously most notifications report on the group of fruits and vegetables, in which most non-compliances on pesticides are traditionally found. All notifications in the "cocoa and cocoa preparations, coffee and tea" category concern tea; as can be derived from the Sankey diagram below, mostly from China and from India.

Food product categories for pesticide residues notifications, set out against non-member country of origin set out against notifying country



As many as 143 out of the 222 notifications are rejections at the EEA border. These products therefore never entered the EU. This is certainly in part due to the list of commodities held under Regulation 669/2009, which is reviewed twice yearly, that requires intensified checking at the border.

From 1 January 2016 however, working instruction 2.2 is applied in RASFF for evaluating the risk posed by pesticide residue notifications on the basis of a short term intake exceeding the acute reference dose for a pesticide active substance. If the acute reference dose is not exceeded, no health risk is expected. From 2016 onwards therefore, for notifications made in RASFF on pesticide residues, the residue level is sufficiently high to not allow excluding an acute health risk to the consumer. Chronic health risks are normally not considered, because the residue level is found in one particular batch of product; therefore, even if the product is consumed, the consumer will normally only be exposed to this particular level for a (very) short period of time.

Recurrent notifications

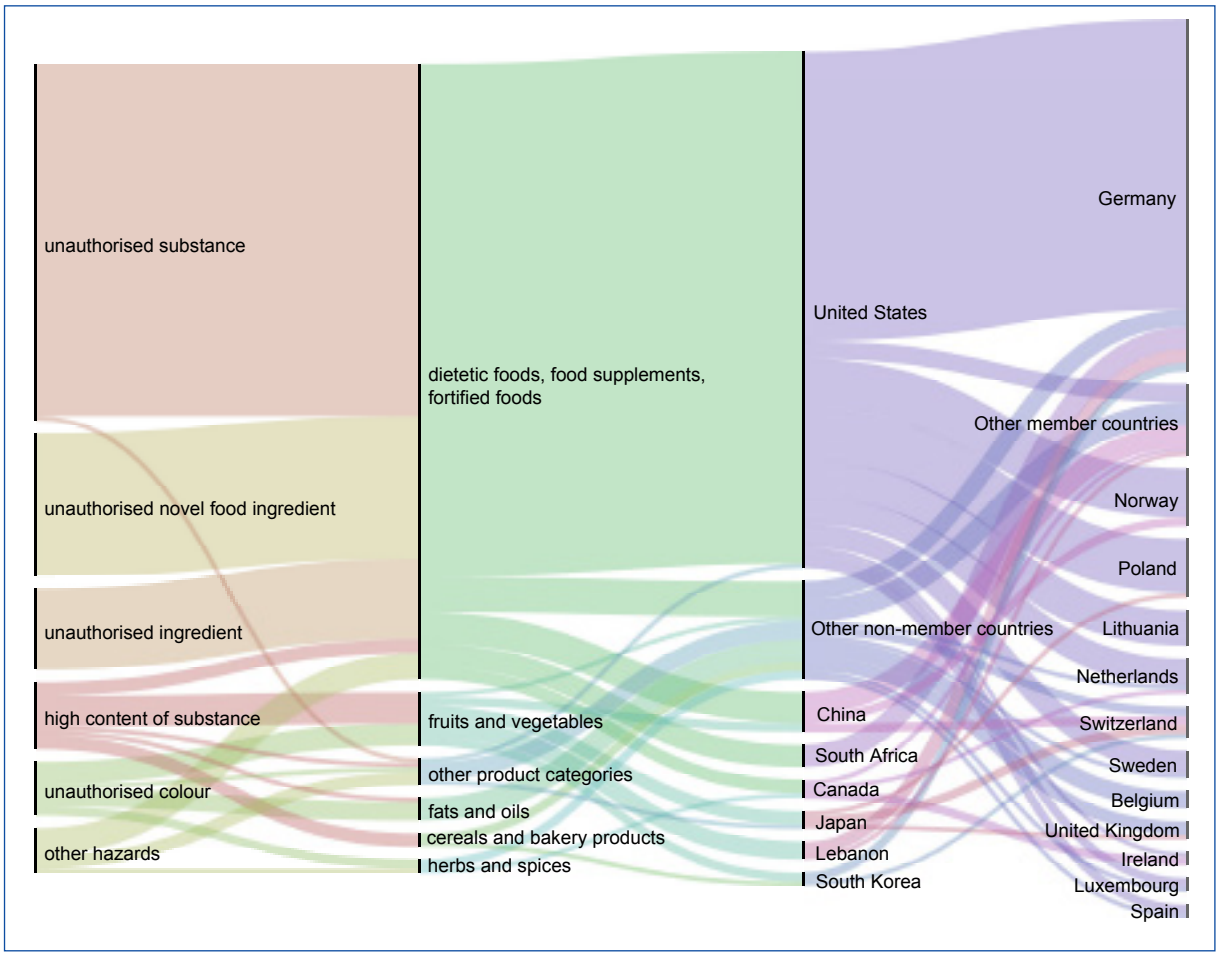
- Sweet peppers from Turkey: 56 notifications (all are border rejections), all notified by Bulgaria
- Unauthorised substance propargite in tea from India: 11 notifications (all are border rejections), mostly notified by Italy
- Chlorpyrifos in lemons from Turkey: 10 notifications (all are border rejections), mostly notified by Bulgaria

Composition

125 notifications

The Sankey diagram below makes it very clear that the overwhelming issue concerns substances in food supplements from the United States.

Composition issues set out against food product category, set out against non-member country of origin set out against notifying country



Let's have a look at these composition issues one by one.

Unauthorised substance (81 notifications)

The number of notifications on unauthorised substances has risen back to the levels of 2014, after having dropped in 2015. There are basically two types of issues that can be differentiated here:

- unauthorised mineral or amino acid compounds not listed in Directive 2002/46/EC as amended;
- substances unauthorised because having a metabolic or pharmaceutical effect.

For more information: see RASFF annual report 2014.

Unauthorised novel food (ingredient) (58 notifications)

There are many different novel food ingredients identified in the RASFF over the years but the number of notifications increased significantly in 2016. What makes a food a novel food? Foods falling within the scope of the Novel Food Regulation (EC) No 258/97 are considered to be novel and therefore have to be authorised in order to be placed on the market within the Union. Novel foods are foods that have not been consumed to a significant degree within the Union before May 1997 (when the first novel food legislation entered into force). In order to determine whether or not a food falls within the scope of this regulation the history of human consumption of the food to a significant degree within the Union before 15 May 1997 must be demonstrated.

Most of the novel food notifications concerned food supplements, primarily from the United States. For more details on novel foods and novel food ingredients notified to RASFF in the last five years, please see the annex to this report.

Unauthorised ingredient (65 notifications)

Especially towards the end of 2016, the "influx" of notifications on food supplements became so significant, that it was impossible to properly research and classify the substances as novel food or unauthorised substance. These substances were therefore temporarily classified as "unauthorised ingredients", but some of them may turn out to be unauthorised novel food ingredients. Especially Germany was an important contributor of notifications, which can probably in part be explained by the fact that they have a specialised unit dealing with online sales. They are actively monitoring the sales of products that may pose a risk to consumers due to their composition. The increase of notifications on food supplements is likely partly due to the particular e-commerce distribution channel.

High content of substance (15 notifications)

These are substances for which no EU limits are set but the content is so high that it is considered to present a health risk according to the assessment by the notifying country or if there are national limits set. An often reported issue is high levels of iodine in seaweed, which can be dangerous for persons who normally have a low iodine intake as it may be disruptive to a good thyroid gland function. In food supplements it concerns mostly a too high dosage of vitamins or minerals. In cereals, there were three notifications on high content of aluminium in rice noodles, an issue which had been frequently notified in the past (see RASFF annual report 2009 and others).

Unauthorised colour (12 notifications)

This is an "evergreen" that still pops up now and again. Remember the "Sudan dyes" in spices etc. more than 10 years ago? The issue is a bit more diverse now, with different substances and foods but fortunately, it is much less notified than in those days. Sudan dyes were still reported 4 times in red palm oil from Senegal and Guinea. This unrefined palm oil is supposed to have a naturally red colour. Also slightly unnaturally coloured were pickled turnips from Lebanon, found to contain Rhodamine B. The finding of substantial amounts of Reactive Red 195 in a "fruit concentrate" from Mexico, used to colour meat products, sparked product withdrawals in around 40 countries worldwide.

Adulteration/fraud

110 notifications

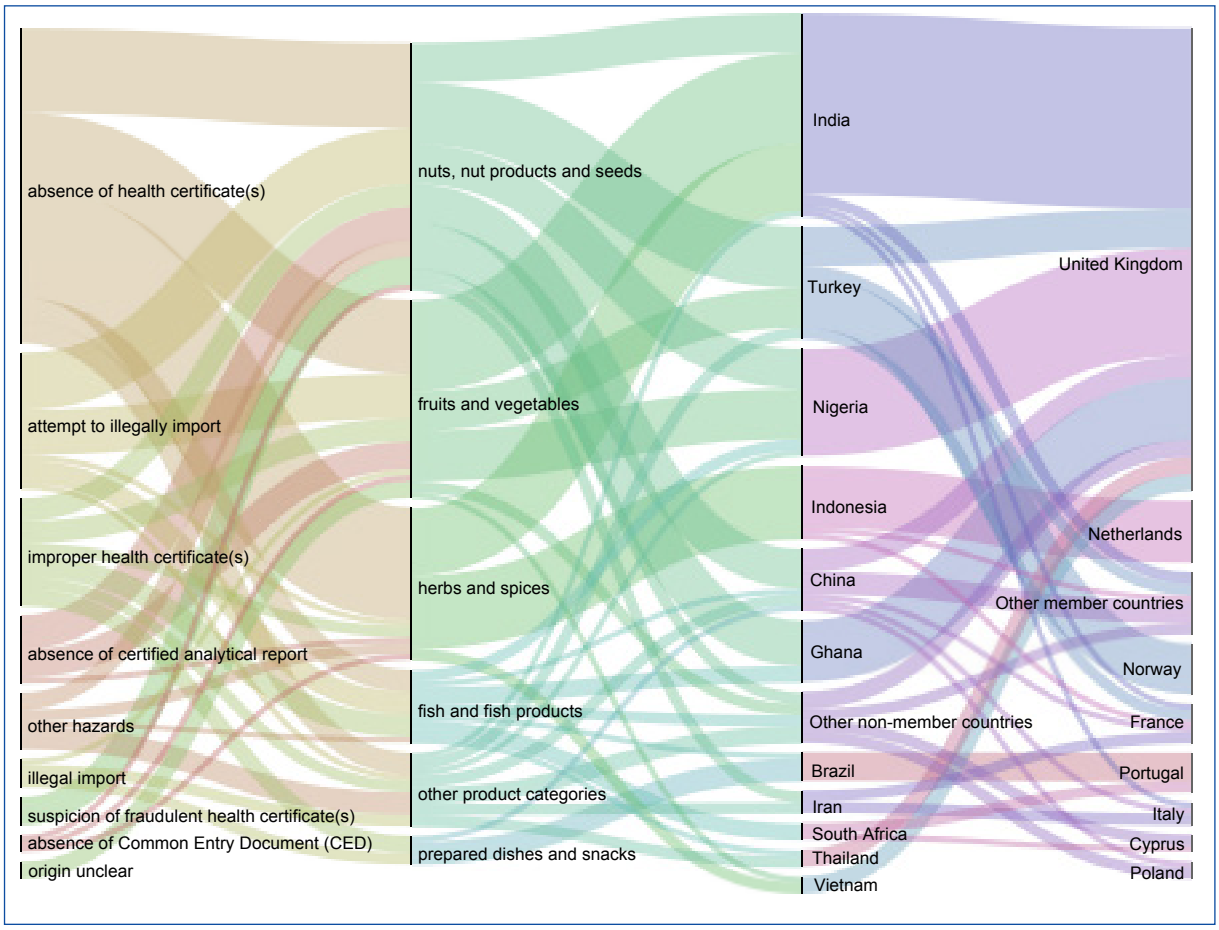
This category of notifications contains issues that could be the result of an adulteration or a fraud, but the majority of the notifications most likely are not. What's in the can?

- Health certificate issues: health certificates are sometimes required for importing a product into the EU. The certificates can be absent from the consignment or may not have the proper form and content requirements prescribed by legislation. Sometimes they are suspected of being falsified.

- Illegal import: some commodities are not allowed to be imported or have to be declared to food safety authorities to be checked prior to import.

- Commodities that need to be checked prior to import require a Common Entry Document (CED) or Common Veterinary Entry Document (CVED) for products of animal origin.

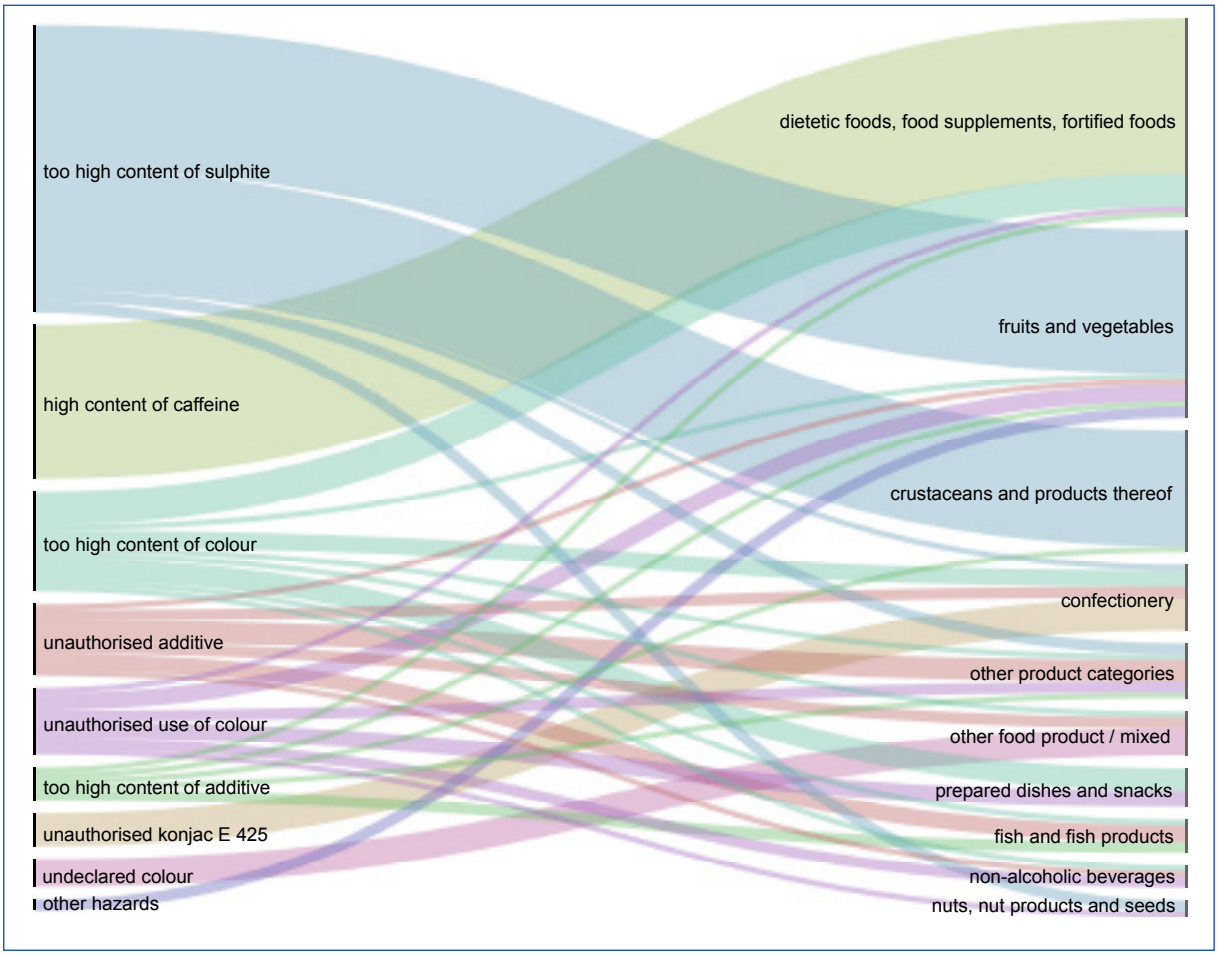
Irregularities notified set out against food product category, set out against non-member country of origin set out against notifying country



Food additives and flavourings

105 notifications

Issues around food additives are often looked upon by consumers with suspicion. It is assumed that those “E numbers” are probably not very good for health. The E numbers derived from European legislation nevertheless provide a tight barrier against any possible addition of substances that are not proven harmless to health. Besides that, to get a food additive authorised, a comprehensive dossier needs to be presented, not only proving that the substance presents no health risk to consumers, but also demonstrating the technological need and specifying how it benefits consumers.



Most notifications concern a non-respect of the imposed dosage of a food additive in a particular food. Such "too high content" only rarely presents a real risk to consumers. From all food additive notifications, only very few were evaluated as presenting a "serious risk". An example is the "undeclared sweetener E 951 – aspartame" which can cause harm to persons suffering from phenylketonuria. These persons cannot metabolise phenylalanine, which is present in aspartame. Another case is the additive E 245 - konjac, which is a gelling agent unauthorised in jelly-type confectionery, because it presents a suffocation risk.

Recurrent notifications

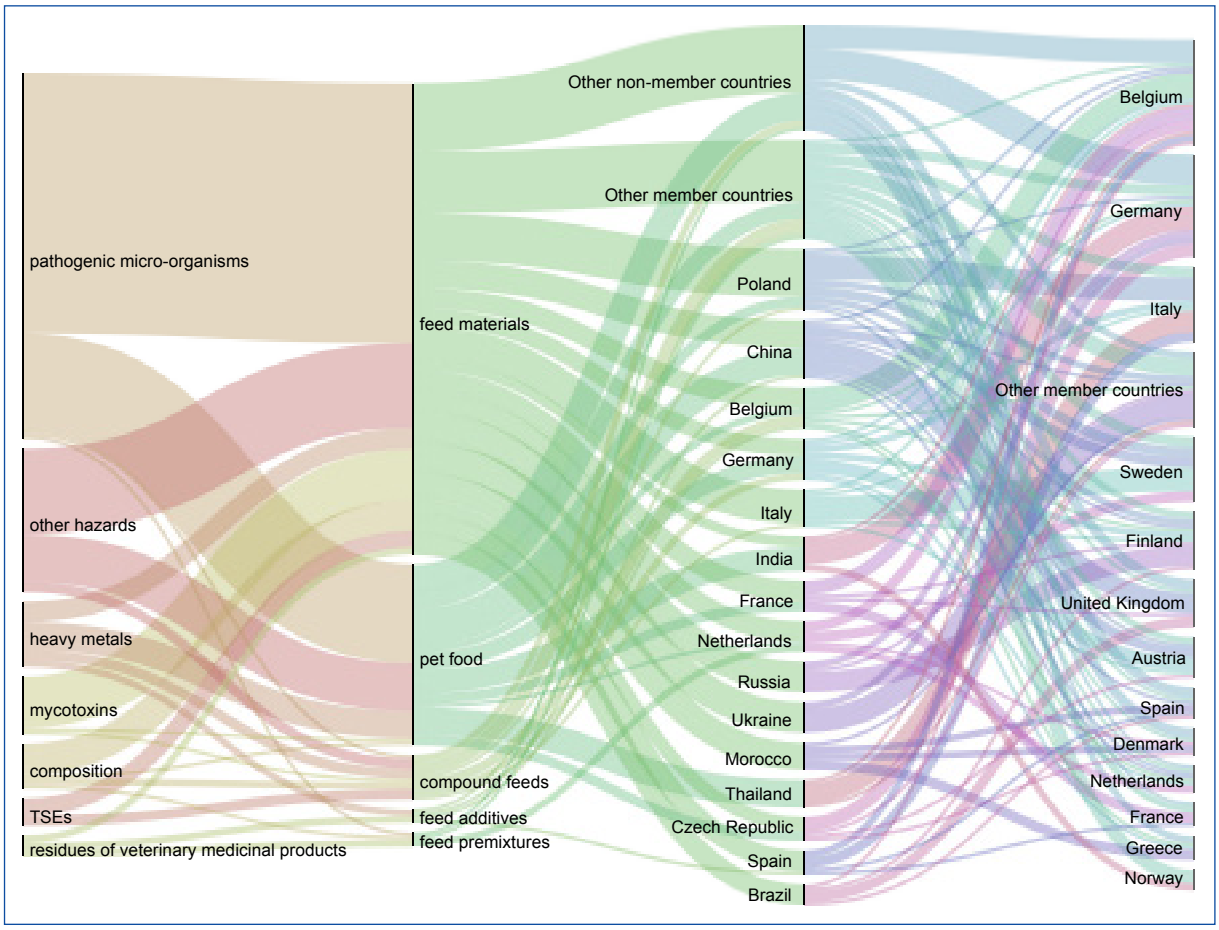
- Too high content of sulphite in dried apricots from Turkey: 21 notifications (all but one of which are border rejections)
- High content of caffeine in food supplements from the United States: 19 notifications (none of which are border rejections): the high content of caffeine is consistently reported in combination with unauthorised and often dangerous substances, increasing the metabolism and blood pressure, which increases the risk for cardiovascular disorder.

2016 top 10 feed hazard and product categories

209 notifications

The notifications regarding feed take about 7% of the total volume of RASFF notifications and their number is comparable to what was reported in 2015.

Hazard categories for feed notifications set out against feed product categories, set out against country of origin set out against notifying country



Apart from four notifications on low levels of dioxins exceeding the EU limit (three in feed materials, one in compound feed), most of the notifications grouped under "other hazards" concern non-pathogenic micro-organisms (23 notifications). The findings reported are almost entirely Enterobacteriaceae of which a too high count was found in (animal origin) pet food or raw materials for pet food.

Pathogenic microorganisms

Out of 108 notifications, no less than 106 concern *Salmonella*, in different types of feed materials, but also in pet food. Especially in dog chews, this is considered a serious health risk, not so much for the dog itself but for a child which may be contaminated from a dog chew lying around the house.

Heavy metals

Five notifications on lead concerned two reportings of reindeer meal and three on mineral feed. Neither the notifications nor the follow-ups identified the cause of the non-compliant lead levels in the reindeer meal. A too high level of mercury in tuna-based pet food in particular from Thailand was the main reason for notifications on mercury.

Mycotoxins

The notifications on mycotoxins all concern aflatoxins, reported in groundnuts of various origin. Other commodities reported are sunflower seeds and maize.

Composition

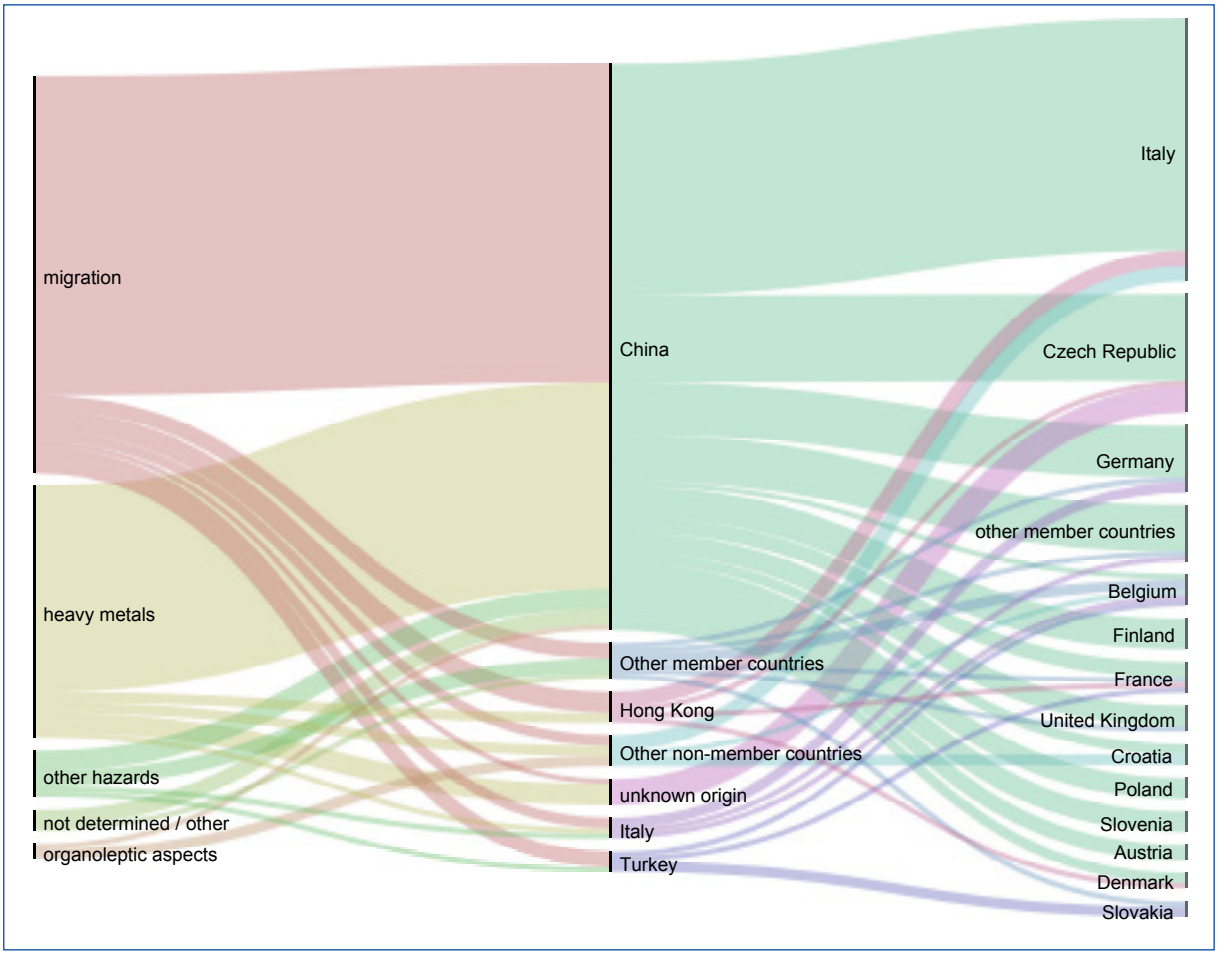
Most of the notifications concerned too high levels of ragweed (Ambrosia spp.) seeds in various feeds. Ragweed seeds present an indirect risk to human health because they may cause serious allergenic problems for people when allowed to spread in nature and flower.

TSEs

All notifications concerned ruminant DNA in fish feeds. Although the issue has been reported less, it goes back to 2013: see RASFF annual report 2013 for more details.

2016 top 10 food contact material hazard categories, set out against country of origin set out against notifying country

131 notifications



The final Sankey diagram of the report demonstrates that food contact material issues are still dominated by products originating from China, which likely reflects the market situation as well. Over the last years, the number of notifications on food contact materials continues to decline, representing in 2016 4.5% of all notifications.

Migration

Most issues relating to food contact materials are about the migration of chemicals from the food contact material into food. This is usually measured by bringing the material in contact with a "simulation solution" and measuring the chemicals that have migrated into the solution. Depending on the type of material, different chemicals will migrate. The table below gives an overview of the main materials and migrants notified to RASFF in 2016:

food contact material	compounds migrating	notifications in 2016
melamine	formaldehyde, melamine	27
nylon	primary aromatic hydrocarbons	17
metal	chromium, nickel, manganese	30
ceramics, decorated glass	lead, cadmium	19
silicone	volatile organic compounds	3
lids of jars, plastic objects	plasticizers	7

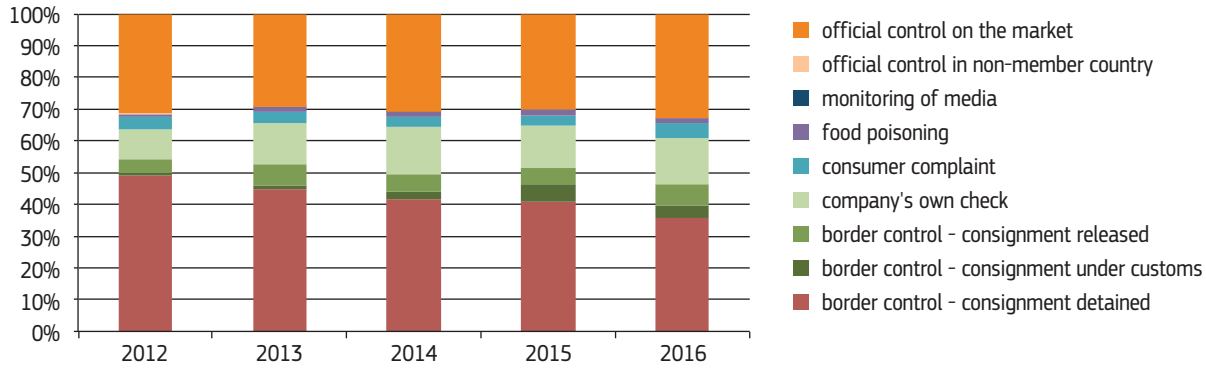
Heavy metals

The heavy metals issue is usually one of migration. This was the case for all 49 notifications. It concerned therefore the metal, ceramic and glass objects mentioned in the above table.

3. More facts and figures

Evolution of the number of notifications since 2012

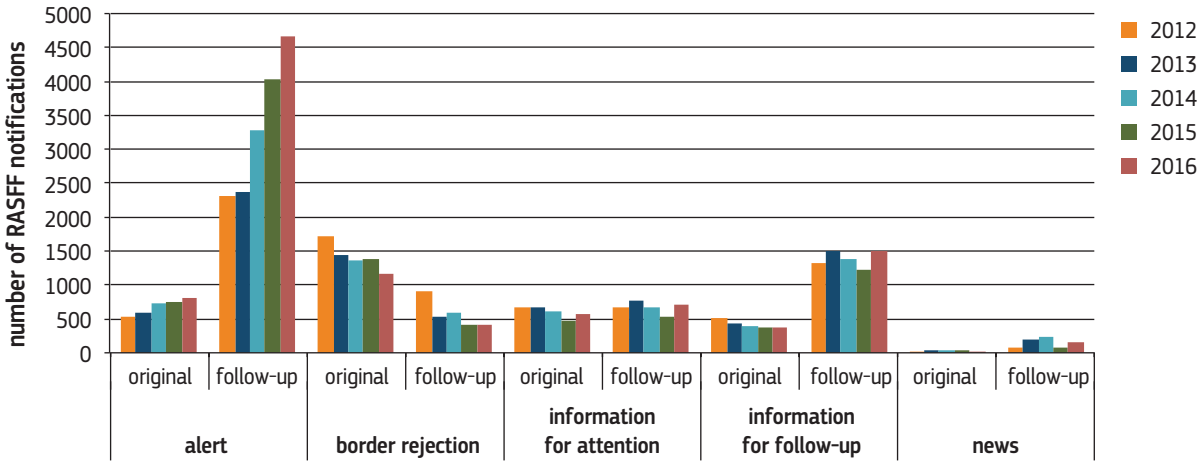
- by notification basis



- by notification classification

Original and follow-up notifications

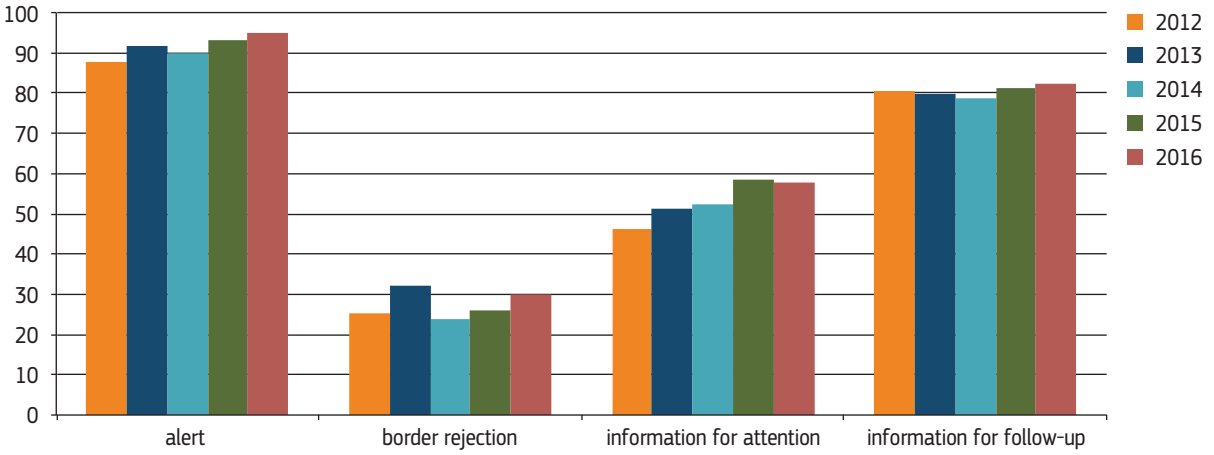
year	alert		border rejection		information for attention		information for follow-up	
	original	follow-up	original	follow-up	original	follow-up	original	follow-up
2012	523	2312	1712	906	679	664	507	1325
2013	584	2376	1438	525	679	763	429	1493
2014	725	3280	1357	581	605	670	402	1377
2015	748	4028	1376	417	475	538	378	1222
2016	821	4666	1160	421	578	704	371	1497



The chart shows clearly that growth in RASFF is very particularly occurring in alert notifications and especially in follow-ups to alerts. This resulted in more than half of the RASFF notifications exchanged in 2016 being related to alerts.

The chart below shows original notifications with follow-up. These are original notifications to which at least one follow-up was given.

Original notifications with follow-up



The chart shows that, although the number of follow-ups as a whole significantly rose in 2016, there are still a significant number of notifications that were not followed up at all. Especially in the alert category the objective is to reach 100%. The numbers for 2016 are going in the right direction in that respect!

- by notifying country

Original notifications

Evolution of original notifications by notifying country

country	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*
Austria	87	110	88	65	49	46	46	56	46
Belgium	107	117	94	128	143	164	198	179	129
Bulgaria	22	26	33	116	75	54	87	99	92
Commission Services	6	22	12	4	1	1			1
Croatia						8	11	20	28
Cyprus	65	53	52	76	47	44	55	39	29
Czech Republic	55	68	90	96	71	70	70	56	79
Denmark	127	122	131	151	130	112	99	94	80
Estonia	11	13	18	9	17	32	12	17	15
Finland	93	141	130	111	105	88	98	55	57
France	137	157	171	199	275	249	266	235	194
Germany	438	412	396	416	362	331	330	275	369
Greece	106	160	157	128	65	65	60	64	57
Hungary	17	10	20	13	10	3	15	9	20
Iceland	1	1	2	6	3	1	1	4	1
Ireland	27	30	33	49	53	40	42	57	31
Italy	470	466	541	544	515	528	503	506	417
Latvia	32	14	21	17	26	27	20	42	28
Lithuania	50	33	48	39	51	28	36	30	42
Luxembourg	11	16	23	25	8	17	12	13	13
Malta	30	18	12	27	11	12	8	13	15
Netherlands	246	212	214	202	173	264	252	258	287
Norway	50	30	23	51	61	45	44	31	67
Poland	156	141	140	226	180	120	132	90	74
Portugal	14	8	18	22	28	40	38	30	33
Romania	13	18	25	21	14	14	17	23	16
Slovakia	56	52	56	35	35	35	38	34	40
Slovenia	76	73	56	45	43	34	30	39	32
Spain	141	255	285	300	239	200	189	174	148
Sweden	50	60	73	72	95	91	67	74	94
Switzerland		4	7	6	20	40	34	24	47
United Kingdom	346	334	319	509	516	327	279	337	349

Follow-up notifications

Evolution of follow-up notifications by notifying member

country	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*% change*
Austria	52	197	71	118	79	80	117	188	202	7
Belgium	135	178	117	158	210	240	297	262	290	10
Bulgaria	28	44	57	56	60	106	147	143	187	24
Commission Services	177	196	307	346	340	421	424	426	352	-21
Croatia	3	1	3		2	15	31	31	66	53
Cyprus	72	57	68	47	76	73	62	78	85	8
Czech Republic	105	194	185	199	163	210	232	190	230	17
Denmark	110	118	95	160	131	179	207	198	180	-10
Estonia	7	4	17	24	23	46	60	65	75	13
European Food Safety Authority							2			
Finland	13	25	23	19	23	64	97	94	98	4
France	272	256	556	361	283	242	325	359	453	21
Germany	423	489	452	519	409	376	512	483	597	19
Greece	60	132	113	118	98	66	74	91	87	-5
Hungary	51	95	85	103	120	91	143	90	207	57
Iceland	2	1	1	5			4	6	12	50
Ireland	46	27	43	60	72	154	130	115	143	20
Italy	321	413	520	654	486	439	433	587	693	15
Latvia	16	30	32	40	36	43	68	58	64	9
Liechtenstein						3		1		
Lithuania	21	26	51	55	72	69	70	59	89	34
Luxembourg	33	11	15	16	8	30	37	37	48	23
Malta	33	44	43	24	32	43	42	77	96	20
Netherlands	180	149	155	135	180	222	265	364	497	27
Norway	22	41	44	49	58	44	58	67	98	32
Poland	137	154	154	202	313	415	420	343	412	17
Portugal	31	28	42	25	74	85	109	138	96	-44
Romania	27	40	48	63	85	76	137	127	123	-3
Slovakia	49	44	68	69	76	59	70	74	86	14
Slovenia	35	93	42	47	86	44	68	76	100	24
Spain	911	999	1288	1077	1058	706	719	648	733	12
Sweden	54	60	83	84	95	161	155	201	211	5
Switzerland	49	51	70	62	87	85	105	138	176	22
United Kingdom	118	168	125	152	182	141	109	219	382	43

2016 notifications by hazard category and by classification

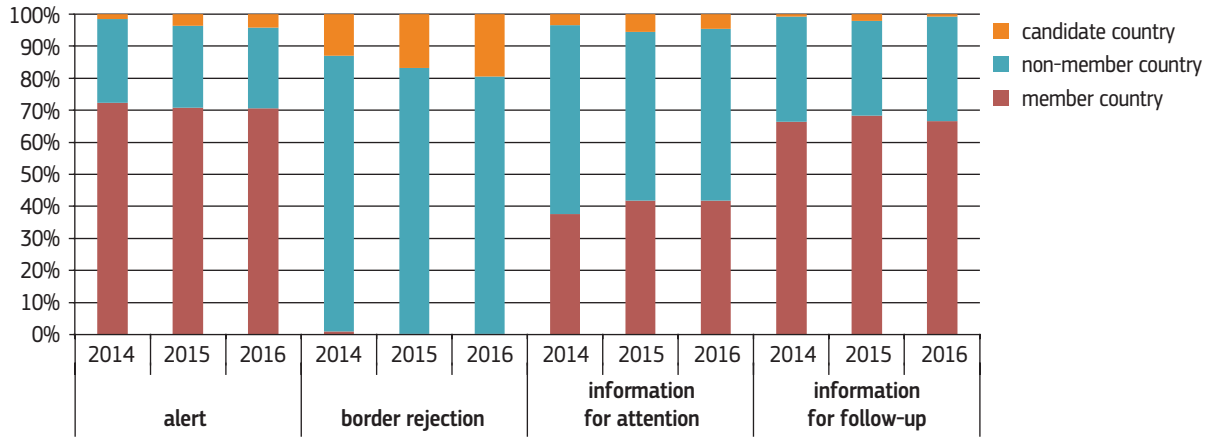
hazard category	*Alert*	*border rejection*	*information for attention*	*information for follow-up*
adulteration / fraud		107	1	4
allergens	87	4	16	6
biocontaminants	18	6	22	
biotoxins (other)	12		6	1
chemical contamination (other)			1	1
composition	93	15	35	36
feed additives	1			2
food additives and flavourings	41	62	43	22
foreign bodies	76	14	10	34
GMO / novel food	12	11	18	52
heavy metals	78	57	71	12
industrial contaminants	23	14	19	5
labelling absent/incomplete/incorrect	8	5	7	8
migration	9	40	18	11
mycotoxins	82	418	49	2
non-pathogenic micro-organisms	2	22	8	30
not determined / other	4	3	2	1
organoleptic aspects	2	27	3	8
packaging defective / incorrect	5	15	1	4
parasitic infestation		3	11	9
pathogenic micro-organisms	250	159	183	93
pesticide residues	38	142	62	11
poor or insufficient controls	2	78	4	13
radiation		1	2	2
residues of veterinary medicinal products	10	12	12	13
TSEs			3	5

2016 notifications by product category and by classification

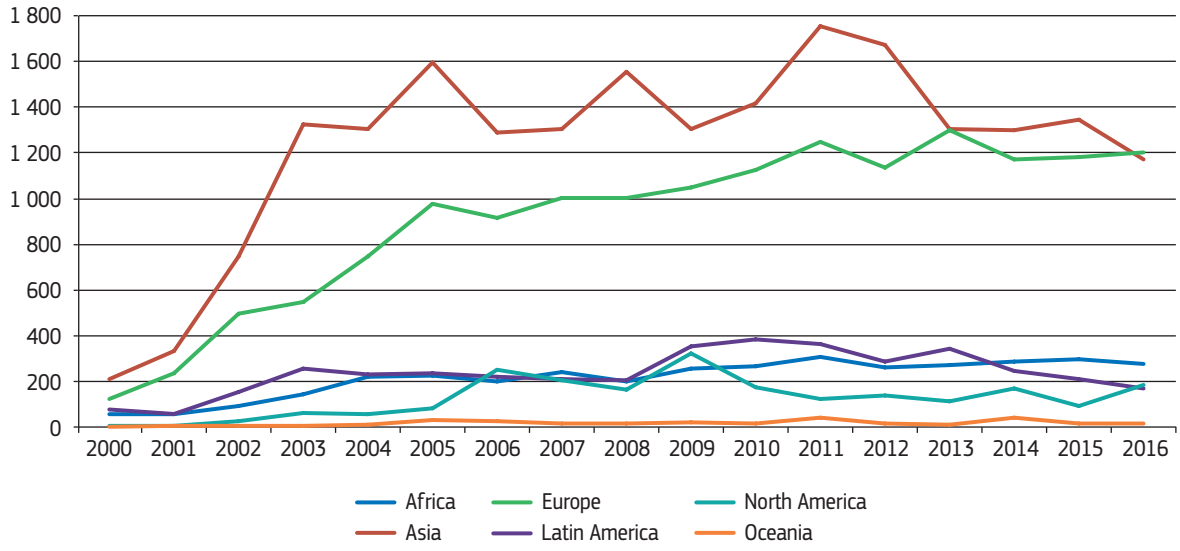
product category	*alert*	*border rejection*	*information for attention*	*information for follow-up*
alcoholic beverages	5		1	2
animal by-products		2		
bivalve molluscs and products thereof	42	10	32	
cephalopods and products thereof	3	21	15	
cereals and bakery products	74	16	8	14
cocoa and cocoa preparations, coffee and tea	21	27	2	8
compound feeds	3		2	8
confectionery	9	8	5	2
crustaceans and products thereof	6	26	25	12
dietetic foods, food supplements, fortified foods	83	16	32	67
eggs and egg products	8		6	4
fats and oils	10	7	6	
feed additives			1	3
feed materials	9	22	28	79
feed premixtures	1		1	2
fish and fish products	98	102	103	24
food additives and flavourings		4		1
food contact materials	27	62	28	15
fruits and vegetables	100	272	98	27
gastropods		1		
herbs and spices	22	106	41	7
honey and royal jelly	2	1	3	1
ices and desserts	3			
meat and meat products (other than poultry)	75	10	30	32
milk and milk products	39		7	13
natural mineral water	1			
non-alcoholic beverages	5	2	2	5
nuts, nut products and seeds	47	362	25	9
other food product / mixed	7	7	1	3
pet food	14	20	8	8
poultry meat and poultry meat products	70	47	57	10
prepared dishes and snacks	24	5	6	8
soups, broths, sauces and condiments	12	4	4	7
water for human consumption (other)	1		1	

Notifications – country of origin

2014-2016 notifications by country type (origin)



2000-2016 notifications by world region



4. Annex: in case you want more data

2014-2016 notifications by country of origin

country	2014	2015	2016
Afghanistan	7	6	2
Albania	4	4	
Algeria		3	
Andorra			1
Argentina	40	23	34
Australia	11	9	5
Austria	9	21	17
Azerbaijan		1	6
Bangladesh	18	6	9
Belarus	1	25	
Belgium	75	59	54
Belize		2	
Benin	2	1	5
Bolivia	1	5	6
Bosnia and Herzegovina	3	3	4
Brazil	109	91	57
Bulgaria	17	8	11
Burkina Faso			1
Burundi	1		
Cambodia	23	6	3
Cameroon		2	2
Canada	7	7	7
Cape Verde	2	2	3
Chile	12	14	11
China	417	394	254
Colombia		4	5
Costa Rica	7		4
Côte d'Ivoire	7	1	1
Croatia	3	9	6
Curaçao		1	
Cyprus	1	1	2
Czech Republic	26	22	30
Democratic Republic of the Congo	1		
Denmark	28	27	35
Dominican Republic	29	18	6

country	2014	2015	2016
Ecuador	10	12	9
Egypt	55	78	58
El Salvador			2
Estonia	5	4	2
Ethiopia	4	7	12
Faeroe Islands			1
Fiji			1
Finland	5	1	2
former Yugoslav Republic of Macedonia	1	1	3
France	104	120	118
French Polynesia	1	1	
Gambia	4	9	1
Georgia	1	5	14
Germany	135	117	117
Ghana	12	19	23
Greece	14	12	8
Greenland	1		
Grenada	1		
Guinea	1	1	2
Honduras	1	2	
Hong Kong	15	13	13
Hungary	27	23	24
Iceland	1		4
India	199	276	200
Indonesia	29	21	37
Iran	54	61	68
Ireland	20	17	16
Israel	5	2	7
Italy	89	117	107
Jamaica		1	
Japan	7	3	7
Jordan	2	3	1
Kazakhstan	1	2	
Kenya	20	18	3
Kuwait		2	
Laos		11	29

country	2014	2015	2016
Latvia	14	15	5
Lebanon	8	4	5
Lithuania	6	11	23
Luxembourg		2	2
Madagascar	2	8	9
Malaysia	6	7	6
Maldives		1	
Mali			1
Malta			1
Mauritania	16	15	8
Mauritius	4	4	2
Mexico	6	20	5
Moldova	4	1	3
Montenegro			1
Morocco	37	28	34
Mozambique	1	2	6
Myanmar	1		1
Namibia	6	6	8
Nepal		1	1
Netherlands	113	94	110
Netherlands Antilles	1		
New Zealand	29	5	8
Nicaragua	1	3	4
Niger			1
Nigeria	42	42	25
Norway	8	8	5
Pakistan	19	17	12
Panama	1	1	7
Papua New Guinea	1	1	2
Paraguay		1	1
Peru	25	13	12
Philippines	8	12	9
Poland	131	120	135
Portugal	21	23	18
Réunion		1	
Romania	17	19	14

country	2014	2015	2016
Russia	8	12	18
Saudi Arabia	1	1	2
Senegal	10	7	14
Serbia	10	16	15
Seychelles	3	1	5
Singapore	4	1	
Slovakia	13	8	7
Slovenia	3	2	3
South Africa	11	22	22
South Korea	14	16	9
Spain	169	158	177
Sri Lanka	17	17	15
Sudan	8	1	
Suriname	1	1	1
Sweden	7	25	18
Switzerland	7	3	6
Syria	6	1	4
Taiwan	2	9	8
Tajikistan	1		
Tanzania	1		1
Thailand	90	70	86
Togo	1	1	
Tunisia	35	21	18
Turkey	200	281	274
Uganda	1		10
Ukraine	23	20	19
United Arab Emirates		3	
United Kingdom	50	55	64
United States	164	87	178
unknown origin	1	8	9
Uruguay	4		4
Uzbekistan	17	6	21
Venezuela		1	1
Vietnam	124	85	67
Yemen		1	
Zimbabwe	1		2

2016 notifications by hazard category and notifying country

hazard category	AT	BE	BG	CH	CS	CY	CZ	DE	DK	EE	ES	FI	FR	GB	GR	HR	HU	IE	IS	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK
adulteration / fraud						3	1	1	1		2		6	**64**	2					4				1	11	7	2	5		1	1	
allergens	1	4		2			6	**15**	6	1	7		4	**15**				2		8				4	9	4				11	2	12
biocontaminants	3					1	3	9			5		6							**14**			1	1	1					2		
biotoxins (other)		1						1	1				**8**	3	1										3						1	
chemical contamination (other)								1																	1							
composition	2	7	1	9		2	3	**63**	3	1	6		8	7		1	3	4		2	7	2			12	13	8	1	1	7	5	1
feed additives		1											1												1							
food additives and flavourings		3	8	1		2	3	**34**	11		24		2	14	2	1	2	3		16	4	1	15		3	1	5	6	1	1		5
foreign bodies	7	4		2				**32**	9	1	2	4	9	12	2			5	1	11	2	1		1	13	2	3		1	8	1	1
GMO / novel food	2			1				**28**			8	3	1	5			2	2		2	7	2		1	3	6	17			2		1
heavy metals	2	9	1	5		2	12	10	1		2	3	18	2	4	4				**109**		1	1		14	2	5	6			3	2
industrial contaminants		3					3	**12**	1		1		3	7	2	1				2	4	1			4	1	4	1	1		2	8
labelling absent/incomplete/incorrect	1					1	1	4	1				3	**6**				3		4					2	1		1				
migration	1	5				1	14	5	3		2	2	3	4	2			1		**25**		1				2	1				4	2
mycotoxins	5	33	9	10		9	5	**114**	4	1	29	7	28	64	24	2	1	4		68	2	5		3	84	3	14	4	2	8	7	2
non-pathogenic micro-organisms	3	2	2	1				5	8		**9**			4	1	1	2			6	2		1		4		5	1	1	3		1
not determined / other	1							1			1			2				2		1					1							1
organoleptic aspects		1	1			1		4		1	**10**			1	1	3				6	3				4			4				
packaging defective / incorrect								2	1		2		1	**10**						2					5		1			1		
parasitic infestation							2			2	3		3							**10**	1				1				1			
pathogenic micro-organisms	15	26		5	1	3	17	68	25	8	6	27	79	93	12	14	8	6		**98**	10		9	2	81	14	4	4	7	33	4	6
pesticide residues	5	15	**71**	8		3	7	8	4		3	11	6	14	3		1			29	1	1		2	26	14	8	1	1	10	1	
poor or insufficient controls		2				2	1		2		30		4	**31**	1		2			8					4		2	1		7		
radiation							1	1												1			1		1							
residues of veterinary medicinal products		**10**		3			1	3	1		3		3	4		1				8	2				5		2			1		
TSEs		3													1					3											1	

The coloured cells indicate the country with the highest number of notifications for a given hazard category.

2016 notifications by product category and notifying country

product category	AT	BE	BG	CH	CS	CY	CZ	DE	DK	EE	ES	FI	FR	GB	GR	HR	HU	IE	IS	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK
alcoholic beverages				1				1						3					1	1					1							
animal by-products									1						1																	
bivalve molluscs and products thereof								2	4		2		15	6	1					**42**					6	1		2		2	1	
cephalopods and products thereof				3							5		1	2	1	1				**21**					2	2		1				
cereals and bakery products	8			7			4	**26**	6	1	3	1	3	12	1	1	1			15		5		3	6					5	3	2
cocoa and cocoa preparations, coffee and tea		5		1			2	4	2		3	5	2	1	1					**10**					4	1	7		2	7	1	
compound feeds		3						1	1				2		2					1			1		1						2	
confectionery		4				1	2	1	1		3		1	7							1				1					2		
crustaceans and products thereof		7		1		1		4	4		**15**		8	6	1	1		1		8						5		6		1		
dietetic foods, food supplements, fortified foods	1	1	1			3	4	**64**	2	1	6	1	4	8		1	5	6		4	13	3	1	1	15	18	20	1		5	6	3
eggs and egg products	1	1						2	1				1	1		3	3								**4**				1			
fats and oils		4						2					1	2							3	1			1			1			2	**7**
feed additives		2											2																			
feed materials	6	**23**				2	1	11	3	1	10	17	1	8	3		5			13			4		6	4	2	1		16	1	
feed premixtures		1												1											1				1			
fish and fish products	2	8		5		6	5	22	1	2	38	1	37	27	2	2	2	4		**106**	6		1	2	22	1	3	10	1	10	2	1
food additives and flavourings		1																									3		1			
food contact materials	3	6				2	23	13	3	1	2	6	6	5	2	4		1		**41**		1				2	4				4	3
fruits and vegetables	10	16	77	17		6	10	61	17	2	21	12	21	**87**	6		2	1		29	3	1	15	2	33	16	14	2	2	12	3	1
gastropods														1																		
herbs and spices	1	4		4		5	1	14	1		1	9	6	**57**	4	1		4		6	2	1		1	37	2	2	1	1	3	6	2
honey and royal jelly								1						2						1						3						
ices and desserts								1						1																1		
meat and meat products (other than poultry)	3	6	1				8	14	6	4	1	1	19	6		1		1		21	3		4		**22**		2	1	4	11		8
milk and milk products	1		1	2			1	12	2			1	10	7		1		1		11	1				5	2		1		1		
natural mineral water																											1					
non-alcoholic beverages								**4**	2		1			1				1		1	1				2					1		
nuts, nut products and seeds	4	22	12	4	1	2	4	**75**	3		27	2	22	59	30	1		4		57	2			2	**75**	8	13	2		5	2	5
other food product / mixed		1						**5**			3			3			1	1		1		1			2							
pet food	5	2						**16**	2		1		2	5	1					8						2			2	4		
poultry meat and poultry meat products		10					13	6	13	2	3	1	24	22		11	1	3		17	6		2	2	**33**		3	2	1	3		6
prepared dishes and snacks	1	1		2			1	3	1				5	**7**				2		5	1			1	5			2		4		2
soups, broths, sauces and condiments		2						**5**	4	1	2		1	**5**	1			1						1	3					1		
water for human consumption (other)						1					1																					

The coloured cells indicate the country with the highest number of notifications for a given product category.

2016 notifications by product category and type of control

product category	border	market	%border	%market
alcoholic beverages		8	0	100
animal by-products	2		100	0
bivalve molluscs and products thereof	12	72	14	**86**
cephalopods and products thereof	29	10	**74**	26
cereals and bakery products	18	94	16	**84**
cocoa and cocoa preparations, coffee and tea	23	35	40	60
compound feeds	1	12	8	**92**
confectionery	10	14	42	58
crustaceans and products thereof	41	28	59	41
dietetic foods, food supplements, fortified foods	16	182	8	**92**
eggs and egg products	1	17	6	**94**
fats and oils	12	11	52	48
feed additives		4	0	100
feed materials	38	100	28	**72**
feed premixtures		4	0	100
fish and fish products	131	196	40	60
food additives and flavourings	4	1	**80**	20
food contact materials	42	90	32	**68**
fruits and vegetables	282	214	57	43
gastropods	1		100	0
herbs and spices	125	51	**71**	29
honey and royal jelly	4	3	57	43
ices and desserts		3	0	100
meat and meat products (other than poultry)	22	125	15	**85**
milk and milk products	2	57	3	**97**
natural mineral water		1	0	100
non-alcoholic beverages	3	11	21	**79**
nuts, nut products and seeds	321	122	**72**	28
other food product / mixed	8	10	44	56
pet food	28	22	56	44
poultry meat and poultry meat products	55	129	30	**70**
prepared dishes and snacks	6	37	14	**86**
soups, broths, sauces and condiments	4	23	15	**85**
water for human consumption (other)		2	0	100

2016 non-member countries having provided follow-up

country	distr	orig	other	follow-ups	% reaction
Afghanistan	1	2			0
Albania	5		1	3	60
Algeria	2	1			0
Andorra	15	1	2	16	100
Angola	3				0
Antigua and Barbuda	1				0
Argentina	1	35		10	28
Aruba	1				0
Australia	6	5	1	4	36
Azerbaijan	4	6			0
Bahamas	1				0
Bahrain	5				0
Bangladesh	2	9		2	18
Barbados	3				0
Belarus	6				0
Benin	1	6	1		0
Bermuda	4				0
Bolivia		6			0
Bosnia and Herzegovina	8	4	1	12	100
Brazil	3	58		39	64
British Virgin Islands	1				0
Brunei	2			1	50
Burkina Faso		1			0
Cambodia		3			0
Cameroon		2			0
Canada	14	7	1	2	10
Cape Verde	1	3			0
Cayman Islands	1				0
Chile	2	12		3	21
China	11	255	2		0
Colombia		5		2	40
Congo (Brazzaville)	1				0
Costa Rica	2	4			0
Côte d'Ivoire	4	1			0
Curaçao	3				0
Democratic Republic of the Congo	2				0
Dominican Republic	6	6			0
Ecuador	1	10		9	82
Egypt	6	58	1		0
El Salvador		2			0
Ethiopia		11			0
Faeroe Islands	7	1		1	13
Fiji		1		1	100
former Yugoslav Republic of Macedonia	4	3		7	100
Gabon	1				0
Gambia	1	1			0
Georgia	2	14		16	100
Ghana	2	23			0
Gibraltar	7		1	6	86
Greenland	4				0
Guatemala	1				0
Guernsey	7			1	14
Guinea	1	2			0

country	distr	orig	other	follow-ups	% reaction
Honduras	1				0
Hong Kong	23	12	10	39	111
India	4	203	1	14	7
Indonesia	2	38		2	5
INFOSAN			565		
Iran	2	68			0
Iraq	1				0
Isle of Man	2				0
Israel	3	7		2	20
Japan	11	7	1		0
Jersey	8				0
Jordan	3	1			0
Kazakhstan	4				0
Kenya	1	3		1	25
Kosovo	1				0
Kuwait	1				0
Laos		29		2	7
Lebanon	3	5	1	11	138
Libya	1			1	100
Macao	1				0
Madagascar	2	9			0
Malaysia	5	7			0
Maldives	2				0
Mali	1	1			0
Mauritania	1	8			0
Mauritius	4	2	1	1	17
Mexico	1	5		1	17
Moldova	10	3			0
Monaco	11				0
Montenegro	1	1		1	50
Morocco	11	35		7	15
Mozambique		6		5	83
Myanmar		1			0
Namibia		8		1	13
Nepal	1	1			0
New Caledonia	3				0
New Zealand	3	8			0
Nicaragua		4			0
Niger		1			0
Nigeria		25			0
Oman	3				0
Pakistan		12			0
Panama	3	7			0
Papua New Guinea		2			0
Paraguay		1			0
Peru		12		3	25
Philippines	2	9			0
Qatar	5				0
Russia	24	17			0
San Marino	4				0
Saudi Arabia	5	2			0
Senegal		14		5	36
Serbia	12	15	1	4	15
Seychelles	2	5		2	29

country	distr	orig	other	follow-ups	% reaction
Sierra Leone	1				0
Singapore	18		3		0
Somalia	1				0
South Africa	8	22		10	33
South Korea	7	9		1	6
Sri Lanka	1	15	1		0
Sudan	2				0
Suriname	1	1		1	50
Syria		4			0
Taiwan	8	8	3		0
Tanzania	1	1			0
Thailand	10	86	3	11	11
Togo	3			1	33
Trinidad and Tobago	2				0
Tunisia	1	18	2	3	16
Turkey	10	279	12	11	4
Turkmenistan	2				0
Turks and Caicos Islands	1				0
Uganda		12			0
Ukraine	19	19	2	6	16
United Arab Emirates	28				0
United States	22	179	5	3	1
Uruguay		6		1	17
Uzbekistan		21			0
Venezuela		1			0
Vietnam	4	69	14		0
West Bank and Gaza Strip	1				0
Yemen	1				0
Zimbabwe		2			0

The first column “distribution” shows the number of 2016 notifications for each country to which the Commission’s Services notified distribution of a product. The second column “origin” shows the number of 2016 notifications for each country to which the Commission’s Services notified a product originating from it. The third column “other” gives the number of notifications for which the country was notified for another reason than origin or distribution e.g. if the product transited through the country. The fourth column “follow-ups” shows the number of follow-ups received from each country in 2016. Countries that have received over 10 notifications on products exported to the EU are coloured according to their response with a “red” (zero response), “orange” (limited response) and “green” (good response) colour.

2016 notifications by hazard category and risk decision

hazard category	undecided	serious	not serious
feed			
adulteration / fraud	2		
allergens		1	
biocontaminants			1
biotoxins (other)			1
chemical contamination (other)	1		
composition	1	10	2
feed additives			1
food additives and flavourings	0		
foreign bodies		1	2
GMO / novel food	1		
heavy metals	2	2	15
industrial contaminants		3	1
labelling absent/incomplete/incorrect	0		
migration	0		
mycotoxins	1	18	
non-pathogenic micro-organisms		3	20
not determined / other	0		
organoleptic aspects	0		
packaging defective / incorrect	0		
parasitic infestation	0		
pathogenic micro-organisms	2	24	82
pesticide residues	1		
poor or insufficient controls	1		2
radiation	0		
residues of veterinary medicinal products			6
TSEs			8
food			
adulteration / fraud	7	4	98
allergens	2	102	8
biocontaminants	1	44	
biotoxins (other)		18	
chemical contamination (other)		1	
composition	58	96	10
feed additives	1		1
food additives and flavourings	8	73	87
foreign bodies	14	75	40
GMO / novel food	60	16	16
heavy metals	3	146	1
industrial contaminants	2	45	3
labelling absent/incomplete/incorrect	6	10	12
mycotoxins	3	527	2
non-pathogenic micro-organisms	4		35
not determined / other	2	4	
organoleptic aspects	4	3	30
packaging defective / incorrect	4	4	15
parasitic infestation	2		21
pathogenic micro-organisms	44	498	35
pesticide residues	65	182	5
poor or insufficient controls	9	6	79
radiation		1	4
residues of veterinary medicinal products	6	24	11
TSEs	0		

hazard category	undecided	serious	not serious
food contact material			
adulteration / fraud			1
composition	1	1	
foreign bodies		2	
heavy metals	20	21	8
industrial contaminants	1	3	3
migration	23	27	28
not determined / other		2	2
organoleptic aspects			3
packaging defective / incorrect		2	

There are three tables splitting up the data between FCM, food and feed. Categories coloured red have predominantly notifications with risk decision "serious", whereas categories coloured green have mostly notifications concerning a "non-serious" risk.

2016 data on unauthorised substances and novel foods

List

definition	substance	2012	2013	2014	2015	2016
no definition	Garcinia cambogia Desr				1	
no definition	salicylic acid			1		1
no definition	unauthorised placing on the market	7	29	20	9	8
prohibited ingredient	Ephedra					3
suspicion of	unauthorised placing on the market			1	1	
unauthorised	animal ingredient	1		1		
unauthorised	citrulline	3	1	5		4
unauthorised	glycine	3		1		
unauthorised	ingredient	1	1	4		20
unauthorised	magnesium aspartate			16	2	
unauthorised	nitrite	1			1	
unauthorised	novel food	6	4	9	3	6
unauthorised	novel food ingredient	32	18	37	41	103
unauthorised	plant parts		1			
unauthorised	potassium aspartate			2		
unauthorised substance	1,3-dimethylamylamine (DMAA)	36	7	6	3	16
unauthorised substance	1,3-dimethylbutylamine (nor-DMAA)			1		11
unauthorised substance	2-amino-4-methylpentane citrate					1
unauthorised substance	2-amino-6-methylheptane (DMHA)					1
unauthorised substance	3,3'-diindolylmethane (DIM)			2		1
unauthorised substance	5-alpha-hydroxy-laxogenin					1
unauthorised substance	5-hydroxytryptophan (5-HTP)	1			1	
unauthorised substance	alpha glycerylphosphorylcholine (GPC)			1		
unauthorised substance	androstenedione			3	1	
unauthorised substance	arginine alphaketoglutarate			5	1	6
unauthorised substance	arginine ethyl ester			1		
unauthorised substance	arginine pyroglutamate			1		1
unauthorised substance	arginine-malate			1		
unauthorised substance	beta-alanine		1	4		11
unauthorised substance	beta-phenylmethylamine					3
unauthorised substance	boron			3		1
unauthorised substance	boron amino acid chelate			1		
unauthorised substance	boron citrate		1	6		1
unauthorised substance	bromelain				1	1
unauthorised substance	calcium amino acid chelate			1		
unauthorised substance	calcium caprylate		1			
unauthorised substance	calcium lactate gluconate	1				
unauthorised substance	calcium potassium phosphate-citrate			3		
unauthorised substance	chromium amino acid chelate			2		
unauthorised substance	chromium chelate			2		3
unauthorised substance	chromium dinicotinate glycinate				1	
unauthorised substance	chromium nicotinate			1		
unauthorised substance	chromium nicotinate glycinate chelate			2		
unauthorised substance	chromium polynicotinate	1		1		
unauthorised substance	copper amino acid chelate				1	
unauthorised substance	copper chelate			3		2
unauthorised substance	copper glycinate chelate			3		
unauthorised substance	d-aspartic acid				1	
unauthorised substance	dehydroepiandrosterone (DHEA)					1
unauthorised substance	D-glucosamine					1
unauthorised substance	dibencozide		1			

definition	substance	2012	2013	2014	2015	2016
unauthorised substance	dimethylethanolamine (DMEA)					1
unauthorised substance	dimethylsildenafil	3	1		1	1
unauthorised substance	ethylenediaminetetraacetic acid (EDTA)				5	
unauthorised substance	evodiamine			3		
unauthorised substance	gamma-aminobutyric acid (GABA)			1	1	
unauthorised substance	germanium			2		
unauthorised substance	glutamine alphaketoglutarate			1		
unauthorised substance	guggulsterone			1		
unauthorised substance	huperzine A					3
unauthorised substance	indole-3-carbinol			1		
unauthorised substance	iron amino acid chelate			1		
unauthorised substance	isopropyloctopamine					1
unauthorised substance	L-carnitine fumarate		2	2		
unauthorised substance	lithium			5		
unauthorised substance	L-norvaline			1		
unauthorised substance	magnesium amino acid chelate			1		
unauthorised substance	magnesium caprylate		1			
unauthorised substance	magnesium chelate			1		1
unauthorised substance	magnesium creatine chelate					1
unauthorised substance	magnesium in metal form					1
unauthorised substance	manganese amino acid chelate				1	
unauthorised substance	manganese chelate			3		1
unauthorised substance	manganese glycinate chelate			3		
unauthorised substance	melatonin	1	1			
unauthorised substance	methylcobalamin		1			
unauthorised substance	methylsulphonylmethane (MSM)					1
unauthorised substance	methyl-synephrine			2	1	3
unauthorised substance	molybdenum amino acid chelate		1	1		
unauthorised substance	molybdenum chelate			3		2
unauthorised substance	molybdenum glycinate chelate			3		
unauthorised substance	morpholine	1		1		
unauthorised substance	N,N-dimethyl-2phenylpropan-1-amine					1
unauthorised substance	N-acetyl tyrosine					3
unauthorised substance	N-acetylcysteine		1			1
unauthorised substance	N-acetylglutamine			1		
unauthorised substance	niacinamide				1	1
unauthorised substance	N-nicotinoyl-GABA					1
unauthorised substance	norvaline			2		
unauthorised substance	octopamine	1		1		
unauthorised substance	ornithine alphaketogluturate			1		
unauthorised substance	oxilofrine					1
unauthorised substance	papain				1	1
unauthorised substance	phenethylamine			4	2	16
unauthorised substance	phenolphthalein	8	7			3
unauthorised substance	potassium caprylate		1			
unauthorised substance	potassium chelate			1		1
unauthorised substance	progesterone			2	1	
unauthorised substance	selenium amino acid chelate			3	1	
unauthorised substance	selenium chelate			2		3
unauthorised substance	sibutramine	27	8	4		4
unauthorised substance	sildenafil	8	12	16	5	16
unauthorised substance	sodium glycerophosphate			1		
unauthorised substance	stanozolol				1	
unauthorised substance	strontium			2		

definition	substance	2012	2013	2014	2015	2016
unauthorised substance	superoxide dismutase			1		
unauthorised substance	synephrine	1	16	5	1	15
unauthorised substance	tadalafil	5	3	3	2	1
unauthorised substance	tetrahydrocannabinol (THC)			5	1	4
unauthorised substance	theanine			1		2
unauthorised substance	theobromine					2
unauthorised substance	tocotrienol		2			
unauthorised substance	vanadium	1		7	3	2
unauthorised substance	vanadyl sulphate			1		
unauthorised substance	vardenafil			2		
unauthorised substance	vinpocetine			6		1
unauthorised substance	yohimbine	1	7	6	1	16
unauthorised substance	zinc amino acid chelate			2	1	
unauthorised substance	zinc arginine chelate		1			
unauthorised substance	zinc caprylate		1			
unauthorised substance	zinc chelate					1
unauthorised substance	zinc glycinate chelate			3		
unauthorised substance	zinc picolinate				1	
sum of	unauthorised substance	96	77	171	41	174
unauthorised use of	capsaicin		1			

Novel food

2	African mango (Irvingia gabonensis)
1	betel nuts
1	bitter leaves (Vernonia amygdalina)
1	chia flour (Salvia hispanica)
1	chia seeds in strawberry and raspberry marmelades
1	comfrei (Symphytum officinalis)
1	cuitlacoche (canned maize infected with fungus Ustilago maydis)
1	dongling tea
1	GTF chromium yeast
1	jiaogulan tea
1	meshima mushroom (Phellinus linteus) to be used in food supplements
1	organic cañihua (Chenopodium pallidicaule)
1	organic graviola leaf powder (Annona muricata)
1	organic noni leaf powder
1	pine pollen
6	powdered stevia leaves (Stevia rebaudiana)
1	raw material for food supplements
1	tongkat ali extract powder
1	turkey tail mushroom (Coriolus versicolor) to be used in food supplement
1	zeolite

Novel food ingredient

	2012	2013	2014	2015	2016
Acacia rigidula					5
Achyranthes aspera			1		
aegeline				5	1
agmatine sulphate				7	32
Aqua Armeniacae	1				
Asplenium scolopendrium L.		1			
astaxanthin					1
Bauhinia purpurea					2
betaine		1	8		1
Bombyx mori	1				
Brahmi (Bacopa monnieri)				1	
Bulbus fritillariae cirrhosae	1				
camu camu (Myrciaria dubia)				1	
Canavalia gladiate					1
Casearia sylvestris				1	
Cassia nomame					1
Cirsium oligophyllum					2
Cistanche		1			
Cistus incanus		1			
clinoptilolite			2	3	
Cnidium monnieri	1				
Coriolus versicolor		4	2		
Corynanthe johimbe bark					1
Crateva religiosa					1
creatine derivative	3			1	4
creatine nitrate					4
Cuphea (Cuphea carthaginensis)				1	
Dendrobium nobile				2	
Epimedium	1	3		3	1
Euryale ferox					2
Evodia rutaecarpa					2
Flos Farfarae	1				
Folium Eriobotryae	1				
ginseng	1		1		
Glechoma hederacea		1			
globe amaranth (Gomphrena spp.)	1				
glycine-betaine					1
Gymnema syvestre			1		1
Hemidesmus indicus			1		
holy basil (Ocimum sanctum)				1	
Hoodia gordonii	2	1	1		
Hovenia dulcis				1	
Hydrastis canadensis			1		
jequirity (Abrus precatorius)				1	
Lagerstroemia speciosa			1		
leaves of Annona muricata				1	
Lilium brownii					1
milk thistle (Silybum marianum)			1		
Mucuna pruriens			4	1	3
N-carbamylglutamate					1
norcoclaurine				1	4
parasitic Loranthus					1

	2012	2013	2014	2015	2016
Paulownia extract					1
Phellinus linteus				1	
Phyllanthus emblica		1			
Platostoma pallustre					1
Polygonum multiflorum					1
Psoralea corylifolia					1
Radix Adenophorae	1				
Radix Platycodonis	1				
Radix Polygalae	1				
raspberry ketone				3	1
Rauwolfia canescens					2
Rauwolfia vomitoria root extract					3
Rhizoma Pinelliae Preparatum	1				
Rhodiola rosea		1	3		
Salvia hispanica				1	
Sceletium tortuosum extract					1
Selaginella tamariscina					2
Siraitia Grosvenorii		1	4	1	
Sophora japanica					2
Stevia rebaudiana	5	1	2		6
Synsepalum dulcificum	1		1		
Tabebuia impetiginosa - bark					1
Terminalia chebula		1			
Thermopsis lanceolata					1
tongkat ali (Eurycoma longifolia)	5		1	2	2
Trametes versicolor	2				
Tuckahoe (Peltranda virgilica)			1		
Ulmus pumila			1		
velvet bean (Mucuna pruriens)				1	
Viscum coloratum					1
Xilopia aethiopica	1				
yohimbe bark extract				1	3

Not evaluated

ingredient
11-hydroxyyohimbine
Achyrantes bidentata Bl.
alpha-yohimbine
Anacylus pyrethrum
ashwagandha (Withania somnifera)
Astragalus membranaceus
Atractylodes macrocephala
Azadirachta indica
beta-alanine
beta-ecdysterone
betaine nitrate
Bidens andicola
Bioperine®
black cohosh root extract
Bupleurum chinese, Radix
Chelidonium majus
Chrisanthemum morifolium ramat
Chuquiraga jussieui

ingredient
Coleus forskohlii
Cordyceps sinensis
Cuscuta chinesis, Semen
Cuscuta japonica
Equisetum bogotense
Equisetum giganteum
gallic acid
gamma-aminobutyric acid (GABA)
Garcinia cambogia Desr
hordenine
huperzine A
Hupperzia serratia
isopropyloctopamine
Juglans nigra
L-5-Hydroxytryptophan
Lasiocephalus ovatus
Ligusticum Chuanxiong, Rhizoma
L-isoleucine

ingredient
L-leucine
L-valine
maca root (Lepidium meyenii)
Mesona chinensis
methyl EGCG (ECGC Derivative stack)
Microcos paniculata
Morinda officinalis, Radix
Nepeta hindostana
N-methyl-β-phenylethylamine
Oleuropein aglycone
Operculina turpethum
ovine placenta powder
Oxytropis falcate extract
phenethylamine
Piper carpunya
Plumeria rubra
radix paeonia alba
raspberry ketone
Rauwolfia serpentina
REV-PEA
Rosa laevigata
R-β-methylphenylethylamine
Schisandra chinensis
Scutellaria elliptica & incana
Semen biotae
senna (Cassia angustifolia)
Sida cordifolia
sodium glycerophosphate
Solanum nigrum
St. John Wort (Hypericum perforatum)
Stephania
Szechuan lovage
Tangshen
trans-resveratrol
Tribulus alatus extract
Tribulus terrestris

ingredient
Tropaeolum tuberosum
Tuckahoe
Tussilago farfara
Uva Ursi Leaf
yohimbine
β-methylphenylethylamine
bracken (Pteridium aquilinum)
yanang leaves extract (Tiliacora trianda)
Salvia miltiorrhiza
higenamine
Berberin
Bergenin
Cissus quadrangularis
citicoline
highly branched cyclic dextrin
Swertia chirata extract
pikatropin
n-methyltyramine
halostachine
gotu kola extract
DLPA
theanine
arecoline
sulbutiamine
DMAE L-bitartrate
N-methyl-tyramine
tetradecylthioacetic acid
3,5 diiodthyronin (3,5 T2)
berberine
ginkgolide A
amphetamine
gingko biloba
polygonum cuspidatum
androgenic anabolic steroid
Areca catechu
Aconitum spp

Unauthorised substance

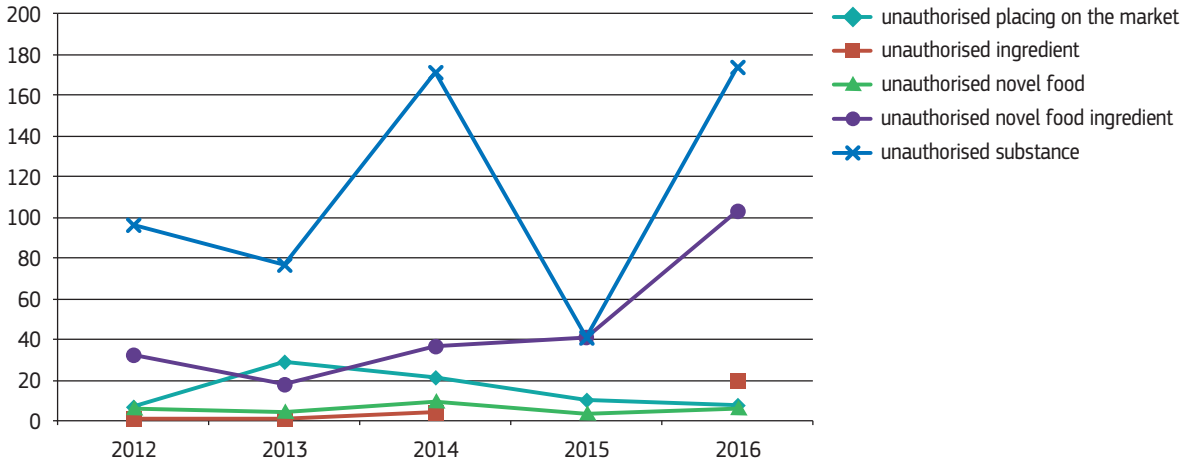
unauthorised substance
1,2-dimethylbutylamine (DMBA)
1,3-dimethylamylamine (DMAA)
1,3-dimethylbutylamine (nor-DMAA)
2-amino-4-methylpentane citrate
2-amino-6-methylheptane (DMHA)
3,3'-diindolylmethane (DIM)
5-alpha-hydroxy-laxogenin
5-hydroxytryptophan (5-HTP)
alpha glycerylphosphorylcholine (GPC)
alpha lipoic acid
androstenedione
arginine alphaketoglutarate
arginine ethyl ester

unauthorised substance
arginine nitrate
arginine pyroglutamate
arginine-malate
beta-alanine
beta-phenylmethylamine
boron
boron amino acid chelate
boron citrate
bromelain
calcium amino acid chelate
calcium caprylate
calcium lactate gluconate
calcium potassium phosphate-citrate

unauthorised substance
chromium amino acid chelate
chromium chelate
chromium dinicotinate glycinate
chromium nicotinate
chromium nicotinate glycinate chelate
chromium polynicotinate
copper amino acid chelate
copper chelate
copper glycinate chelate
creatinol-o-phosphate
d-aspartic acid
dehydroepiandrosterone (DHEA)
D-glucosamine
dibencozide
di-caffeine malate
di-creatine-malate
dimethylethanolamine (DMEA)
dimethylsildenafil
ethylenediaminetetraacetic acid (EDTA)
evodiamine
gamma-aminobutyric acid (GABA)
germanium
glutamine alphaketoglutarate
guggulsterone
huperzine A
i-citrulline
i-citrulline-dl-malate 2:1
indole-3-carbinol
iron amino acid chelate
isopropyloctopamine
L-carnitine fumarate
lithium
L-norvaline
magnesium amino acid chelate
magnesium caprylate
magnesium chelate
magnesium creatine chelate
magnesium in metal form
manganese amino acid chelate
manganese chelate
manganese glycinate chelate
melatonin
methylcobalamin
methylsulphonylmethane (MSM)
methyl-synephrine
molybdenum amino acid chelate
molybdenum chelate
molybdenum glycinate chelate
morpholine
N,N-dimethyl-2phenylpropan-1-amine
N-acetyl tyrosine
N-acetylcysteine
N-acetylglutamine
niacinamide

unauthorised substance
N-nicotinoyl-GABA
norcoclaurine
norvaline
octopamine
ornithine alphaketogluturate
oxilofrine
papain
phenethylamine derivatives
phenolphthalein
potassium caprylate
potassium chelate
progesterone
selenium amino acid chelate
selenium chelate
sibutramine
sildenafil
sodium glycerophosphate
stanozolol
strontium
superoxide dismutase
synephrine
tadalafil
tetrahydrocannabinol (THC)
theanine
theobromine
tocotrienol
tri-creatine-malate
vanadium
vanadyl sulphate
vardenafil
vinpocetine
yohimbine
zinc amino acid chelate
zinc arginine chelate
zinc caprylate
zinc chelate
zinc glycinate chelate
zinc picolinate
citrulline malate
acetyl L-carnitine
glycine propionyl L-carnitine
propionyl-L-carnitine

Overview



1. The first table contains a list of all such substances notified in the past five years but does not provide a detail on novel foods or novel food ingredients.

2. The second table contains a list of foods identified as novel foods, notified in the past five years.

3. The third table contains a list of food ingredients identified as novel food ingredients, notified in the past five years.

4. The fourth table contains substances, foods or food ingredients that were notified to RASFF in the past five years but of which the potential status as novel food (ingredient) is not quite clear and would require confirmation.

5. The fifth table contains substances that are unauthorised mineral or amino acid compounds or that present a pharmaceutical or otherwise harmful metabolic activity, notified in the past five years.

6. The chart above gives an overview of the different types of notifications transmitted in this area in the past five years.

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