

Background Quality Report: *Annual Report of Incidents 2015*

Assessment by the author

Introduction: *Context for the quality report.*

History and source of data

The first annual report on food incidents was published in May 2007 for calendar year 2006. This and later reports show how many food incidents the Agency handled in a year, and what action was taken to protect consumers. The reports mainly use data from the Incident Database.

The Incidents Database was developed to assist the Agency in recording, searching and analysing incident data. This helps the Agency to effectively manage day-to-day incidents and develop longer-term policy. The incidents recorded date back to the creation of the Agency in April 2000.

A major change to the database took place in 2011. Certain fields such as the RASSF Hazard, Food Commodity and Country of Origin were not recorded before this date. Other fields such as Incident Category and Subcategory were not recorded after 2010. Minor changes in the classification of Notifier type have been made since then, often in response to changes in government structure.

Method used to collect incident data and produce the Annual report

Food business operators (FBOs) are required by law to inform the competent authorities where they have reason to believe that a foodstuff that they have imported, produced, manufactured or distributed is not in compliance with food safety requirements. In the case of the UK, the competent authorities are the FSA and the food authorities (local and port health authorities). Similarly under the Food Law Code of Practice local authorities have a requirement to notify the Agency of food incidents.

Incidents are reported to the FSA by internet forms, telephone or other means. Each incident is assigned to an Incident Manager. They will enter the details into the Incident Database, and responsible for keeping the record up to date and accurate.

For the 2015 report, an extract from the database was made at the end of the year. (Before 2014, an extract was made and cleaned each month, but this has been halted to make better use of resources.) The end-of-year extract includes Incident Number, Date and the fields that will be used in the report (Title, RASFF Hazard Category, Notifier type, Food Commodity Type and Country of Origin). In addition, the Incident Title and Source fields are also extracted to check for consistency and help impute missing values. These fields are also used to breakdown the RASFF Hazard Category in Appendix A.

Many of the incidents are also recorded in the EU's Rapid Alert System for Food and Feed (RASFF). Where a record has missing values and the RASFF code can be identified, the values from RASFF are usually used. Otherwise, an automated process looks for keywords in these fields that may be indicative of the appropriate category. These are used to impute missing values and to check the accuracy of the recorded values. Any inconsistencies are checked manually and any fields judged to

be incorrect or absent may also be edited.

This process provides all almost all of the information about incidents from 2015 in the report. In addition, a separate list of Food Alerts is used to produce one table in the Annual Report. Furthermore, some information about UK notifications on the Rapid Alert System for Food and Feed (RASFF) is downloaded from the RASFF web portal.

The Annual Report of Incidents is published on the National Statistics website (www.statistics.gov.uk) in May each year. The available documentation includes a Statement of Administrative Sources, the User Guide for the Incidents Database and this Background Quality Report for the Annual Report.

Relevance

The degree to which the statistical product meets user needs in both coverage and content.

Description of the Annual Report to determine its scope

The Annual Report of Incidents acts as a public record of incident levels for reference purposes and answering information requests from the public. It provides breakdowns of the number of reported incidents by year, incident category, notifier and risk severity. Breakdowns by other factors are only possible by interrogating the Incidents database directly.

Users and their needs.

The Food Standards Agency also makes use of the Report for its own reference and provides it as a first resource for general inquiries. Other users of the Annual Report of Incidents may include Local Authorities, food business operators, academics, as well as UK and EU government bodies. In particular, Local Authorities and other notifiers can see how the incidents they report fit with the overall picture for the UK.

Academics make use of incident numbers to provide context to their research. Information from the Executive Summary is often used by new digest services, especially those aimed at the food industry. Furthermore, the Food Statistics Pocketbook that is produced by DEFRA includes trends in the number of contamination incidents investigated by the Food Standards Agency by Incident Category that is taken from the Annual Report.

Some users have requested information about incidents at a more detailed level than provided in the Annual Report. Such specific requests usually can only be met by providing disaggregated data, rather than more detailed tables in the Report.

Users were consulted as to their views of Annual Report by a web survey in 2015. However, no responses were received. Internet searches and social media is also used to assess who is using the Report and to enquire about their needs are.

Data Sources

Almost all of the statistics in the Annual Report are derived from the Incidents database. The database helps the Agency to manage day-to-day incidents effectively, to brief Directors, and to answer PQs, Ministers Correspondence cases, TOs and FOI requests. Furthermore, statistics from the database provide indicators for incident-related Strategic Plan targets, inform in the Agency's Incident Prevention

Strategy and help to identify emerging risks.

The Database is also important in terms of 'corporate memory', as it helps to determine what scientific and legal advice was given before for similar incidents and what actions were taken, thus ensuring a consistent response."

Main concepts

- **RASFF Hazard** classes the type of incident, mainly by the contaminant/substance of concern/regulatory breach and/or the type of object affected. This follows the 26 categories used in EFSA's RASFF database.
- **Notifier** indicates the type of public or private sector body responsible for reporting the incident.
- **Food Commodity** indicates the type of food associated with the incident. This also follows the classification used in EFSA's RASFF database
- **Country of Origin** indicates the geographical source of the food affected or possibly affected.

A **food incident** is defined as 'Any event where, based on the information available, there are concerns about actual or suspected threats to the safety or quality of food that could require intervention to protect consumer interests.' A **reported incident** or **notification** is an incident reported to the Incidents Database. They should include all incidents that food businesses are required to report under Regulation (EC) No. 178/2002, and all incidents that Local Authorities are required to report under the Food Law Code of Practice.

Accuracy and Reliability

The proximity between an estimate and the unknown true value.

Coverage

The report covers all reported food incidents to the Agency between 1 January and 31 December of the relevant calendar year. This number is likely to be very substantial, particularly those incidents with minor adverse consequences.

The intended coverage of the Annual Report of Incidents includes:

- all incidents from food businesses under Regulation (EC) No. 178/2002,
- all Incidents from Local Authorities under the Food Law Code of Practice.
- all incidents from any notifier that meet the definition.

Note that the definition of a food incident does not cover overlooked events where there is no information to suspect a threat. Consequently, the underlying number of "food incidents" will be dependent on the level of monitoring and detection and is cannot be a direct measure of risk from food.

Target population: all food and feed incidents affecting the UK that should be reported to the FSA

Subject population: all food and feed incidents actually recorded on the FSA Incidents database.

Under-coverage would occur if businesses, Local Authority or other organizations failed to report every incident of which they are aware. To prevent this, the Agency has engaged with industry and Local Authorities to ensure that they are complying with their legal requirements. In the past, it has run incident handling workshops with both FBOs and local authorities to ensure that both parties are clear on the reporting requirement. It has also carried out targeted audits of local authorities, for example to see that local incidents have been notified to the FSA in line with guidance requirements.

The Agency also has in place various Memoranda of Understanding and Operating Agreements with external stakeholders for incident notification. These organizations include the Animal Health and Veterinary Laboratories Agency, the Environment Agency and the Centre for Environment, Fisheries & Aquaculture Science.

Many other factors can affect the level of reported incidents, such as changes in legislation, levels of enforcement, the targeting of surveillance, and the reporting policy of different notifiers. Where these are known, they are usually identified in the report for that year. However most of these drivers are unknown, which makes interpretation of trends difficult.

Therefore, the Annual report is primarily a record of Agency involvement and awareness of food incidents. It is not an adequate source of information to assess the risk from all food incidents.

Most of the incidents will originate in the UK. However, the data include food incidents from overseas which might affect the UK. In particular, the Incidents Database includes EU-wide food alerts from the European Commission.

It is not possible to categorise incidents by the UK regions they have affected. This is because many incidents affect widespread areas, far from their origin or initial point of

detection. The Incident Database does record the lead Local Authority assigned to each incident. If a UK company is responsible for an incident, then the location of their headquarters will decide which LA takes the lead. Otherwise, the lead LA will often reflect where the incident was first discovered. Therefore, the lead LA would only provide a useful geographical classification for localised incidents.

Data capture and data capture errors

Errors can arise when an incident is reported on the Incident database, affecting the breakdown of reported incidents in the Annual Report. To reduce errors, the database uses hover boxes to explain what information is required for each field. It uses drop-down boxes to reduce typographical errors, although there is sometimes a free-text option. In case the notifier accidentally enters the wrong information, the Incidents database presents them with a view of all their entered data to check before it is recorded.

Notifiers can also cause errors of classification through ignorance or in incorrectly interpreting the meaning of a field. Therefore, Incident managers from the Agency may amend information and decide the RASFF Hazard field. At the data extraction stage, the values in RASFF Hazard, Food Commodity and Country of Origin are reviewed and corrected manually.

No attempt has been made to assess the degree of misclassification at this stage. The proportion of respondents with difficulty answering individual questions has not been recorded, and no cognitive testing has taken place. Better guidance or database design might lead to improved results.

RASFF Hazard and Notifier are Mandatory fields that must be completed when an incident is submitted to the database. Therefore, it is unaffected by item non-response, or any bias produced by item imputation.

In the end-of-year extract, there were a large proportion of missing values in the Commodity and Country of Origin fields. Suitable values were assigned in the Final dataset. Additional imputation for these fields takes place for the final dataset, as well as for the FSA category and subcategory.

Proportion of incidents with missing or not matching the final assigned value by field ¹, UK 2015

Field	EOY value used	EOY value present but corrected	EOY value missing and imputed	Missing in Final dataset	Total
RASFF Hazard	63.7%	36.3%	0.0%	0.0%	100.0%
Notifier	100.0%	0.0%	0.0%	0.0%	100.0%
Commodity	31.6%	0.7%	63.8%	3.9%	100.0%
Country of origin	15.1%	0.1%	59.7%	25.0%	100.0%

1. Many incidents had the spelling of the categories corrected in some of the fields. This was done automatically and is not reflected in the figures above.

Despite these measures, a Country of Origin could not be identified after extraction for 25% of incidents. This information is likely to be recorded in within the database but in free-text fields. It was judged that extracting this information would take more resource than is available, as it requires careful examination of the supporting data. (When a country is mentioned, it may not indicate the point of production. It could

refer to the origin of just a few ingredients in the final food, or to the location of some of a food business other than the producer.)

Therefore, due to the difficulties in assigning a Country of Origin to the majority of incidents, and concerns about the reliability of doing so, this field is not used in the 2015 report.

The Date Notified field is often used as a guide to when the incident occurred. However, there will always be some lag between the origin and reporting of an incident. In particular, on-farm outbreaks are often reported several weeks after infection, due to the time taken for diagnosis and laboratory testing. This may mean that some incidents have been classed as being in a later year to the one in which they occurred.

Processing and processing errors

No evaluation of the overall level of misclassification has been made. About a third of the RASFF Hazard values needed to be corrected. The changes made to Commodity and Country of Origin mainly replaced missing values. The values in these fields were altered for less than 1% of incidents.

No changes were made to the Notifier value, because there was insufficient evidence in the database to suggest alternative values. However, there did appear to be some confusion and inconsistencies in the way that this value has been reported. Incidents from the same monitoring programme often do not have the same Notifier type. Furthermore, incidents reported via the RASFF system have been variously classed as "EU Member States" or "European Commission" rather than "RASFF". A check of SLB incidents also showed that they could not all be identified by the Notifier type.

Some reported incidents have a common cause, although this not known at the time of notification. Typically, the Report will treat them as separate incidents, rather a single incident detected and reported several times. Only on a few rare occasions have several incidents been re-classed as a single incident in the Annual Report. This has been in response to very large outbreaks of some disease. (This was not done in 2014). This approach aims to reduce year-to-year variation in incidents totals.

It is not possible to estimate the contribution of processing errors to the bias and variance of the final figures. This is because if an error is detected, it will be corrected as part of processing.

Measures of precision

Currently, the standard errors for key estimates are not estimated. Only simple aggregate totals are presented. Any variance estimates would need to be based on some underlying model. One possibility would be to fit over-dispersed Poisson distribution to each count of the number of incidents.

Timeliness and Punctuality

Timeliness refers to the time gap between publication and the reference period. Punctuality refers to the gap between planned and actual publication dates.

The Annual Report of Incidents relates to incidents reported in a calendar year running from January to December. It should be published in the last week of the following May. This is a time lag of five months.

There are no known time-critical needs for the Annual report of Incidents. Therefore, no provisional version of the figures is published. However, to remain useful as a reference source, it needs to be updated annually. The report has been released on the scheduled release date each year since it became an Official Statistic in 2009.

The Annual report is derived from the Incidents Database in MEMEX. This is a live system, and the latest data can be extracted instantly. The database should be updated as soon as an incident is detected. However, its timeliness depends on the punctuality of notifiers in recording incidents, particularly over weekends. Currently, a few incidents are not recorded until several weeks after they occur. This is why the data is not extracted before late January.

Accessibility and Clarity

Accessibility is the ease with which users are able to access the data, also reflecting the format in which the data are available and the availability of supporting information. Clarity refers to the quality and sufficiency of the metadata, illustrations and accompanying advice.

Accessibility

The Annual Report of Incidents should be published on the National Statistics website (www.statistics.gov.uk) in the first week of June each year. It is available as a pdf file. The data are not available in a non-aggregated form yet.

Only licensed users have direct access to the Incidents database. However, they will provide information to anyone in the Agency with a management need, up to and including the Chief Executive.

Clarity

The Annual Report contains data tables with accompanying commentary and appendices to additional background information

The Annual report also contains basic metadata, such as the definition of an incident. There is no revision process, as figures are not produced on a provisional basis. At present, mechanisms do not exist to measure error or variation in the estimates.

There has not been any feedback from users in recent years. The Annual Report invites users to provide feedback, but none has been received on accessibility and clarity.

If you have any technical queries or other feedback, please contact:

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Coherence and Comparability

Coherence is the degree to which data that are derived from different sources or methods, but refer to the same topic, are similar. Comparability is the degree to which data can be compared over time and domain.

Comparability

The content of the 2015 report differs from previous reports as some breakdowns can no longer be produced. In previous years, data were extracted and cleaned each month, and a FSA Incident type field was manually assigned for internal administrative purposes. Changing priorities have led to this process being discontinued.

Consequently, a time series based on FSA Incident Category and Sub-category can no longer be supported. Instead, the 2015 report primarily categorises incidents using the EFSA Hazard. This forms a new time series dating from 2012 onward. There is no direct relationship between the Hazard and Incident type notifications. However, the Hazard has more categories and provides a more detailed breakdown in most areas.

Furthermore, the 2015 report does not consider the Country of Origin as a reliable value cannot be identified for many incidents. Without the monthly data cleaning, there is a high proportion of missing values for this field. Appropriate values could be deduced from the free-text fields in the Incident database, but this would require considerable extra resources.

Between the instigation of the Incidents Database in April 2000 and the end of 2005, there have been a number of major changes.

- a continual improvement in the reporting and recording systems for incidents
- guidance produced by the Food Incidents Task Force (representing the Agency, industry, enforcement bodies and consumer groups) led to a wider definition of an incident after 2005
- the implementation of European Commission (EC) 178/2002 ('General Food Law') in the UK on 1 January 2005
- Improved engagement with stakeholders such as local authorities, industry, the emergency services and other Governmental departments and agencies.

This appears to have led to a substantial increase in the number of reported incidents over this period. Therefore, comparisons over time using data from this period may be misleading.

Since the beginning of 2006, changes to the legal situation and to statutory monitoring requirements often occur. This has had a major impact to the frequency of certain incidents. Known issues which may have influenced the number of notifications in 2015 include:

1. In December 2014 the EU Food Information for Consumers Regulation (No. 1169/2011) introduced new rules on providing allergen ingredients information for non-prepacked food and on packaging. Some requirements for nutritional and other labelling information also changed. These new requirements may have resulted in products being placed on the market post 13 December with non-compliant labelling thereby increasing the

number of allergy and labelling incidents during 2015.

2. In 2015 and 2016, the National Trading Standards feed delivery programme included additional sampling for coccidiostat carryover during the production process, and in final feeds. Furthermore, the annual National Enforcement Priorities document has directed local authorities to target coccidiostats in their feed control activity. This follows concerns identified by the 2014 audit of the UK's animal feed controls by the European Commission Food and Veterinary Office (FVO).
3. Recent world weather patterns are believed to have increased the levels of mycotoxin contamination (particularly aflatoxin B1) in certain crops harvested in 2013 and 2014. The primary concern is groundnuts (peanuts) from South America, Africa, Asia and the USA destined for market as wild-bird feed. However, other food and feed goods may also be affected.
4. Each year the [National Coordinated Food Standards sampling programme](#) sets different priorities for Enforcement Authority risk-based sampling and surveillance. The levels of investigation may influence the numbers and types of incidents identified. Full details can be found at <http://www.food.gov.uk/enforcement/sampling>
5. Commission Implementing Decision 2014/88/EU imposed a temporary suspension of imports of betel (paan) leaves from Bangladesh from 13th February 2014 (which was subsequently extended to 30th June 2016) following persistent evidence of high levels of *Salmonella* contamination. This has most likely led to a decrease in such incidents from that country.
6. Prior to the introduction of this temporary suspension, additional official controls were already in place for importing betel leaves originating from India and Thailand, again because of concerns about *Salmonella* contamination. Betel leaves from these two countries were listed under Commission Regulation (EU) 669/2009 from 1st April 2014 where ten percent of all consignments had to be sampled and tested for *Salmonella*. The frequency of these checks was increased to 50 percent from January 2015, although betel leaves from Thailand were delisted from October 2015. This may have improved detection of non-compliant consignments and may have deterred others from being imported.

The definitions and data analysis used in the Annual Reports has remained constant, and will not have affected the number of reported results. However, there was a change of software in 2011. This has led to some changes in the reporting options and to the processing of the data.

Coherence

The concepts, definitions and classifications used in the Annual Report of Incidents are usually identical with those in the Incidents database. However, inaccuracies and missing values in the Incidents database can be corrected in the Annual report.

The FSA now also publishes a quarterly list of just those food incidents that led to an alert being issued by the FSA to recall or withdraw products from sale. The first of these summaries covered the last quarter of 2015. See <https://www.food.gov.uk/news-updates/news/2016/15039/fsa-publishes-list-of-incidents-for-october-to-december-2015>.

There is also considerable overlap between the incidents Database and the Rapid

Alert System for Food and Feed (RASFF). This is a Europe-wide database of 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. However, RASFF and the Incidents database use different definitions of an incident/ notification. In particular, RASFF notifications only relate to risks to multiple member states, while the UK database also contains localised incidents. There are no common identifier fields although RASSF numbers may sometimes be recorded in free text fields in the UK incident database.

Some specific types of incidents will be published as parts of other datasets. For instance:

- Food Standards Scotlans publish the results of their Official control monitoring (live bivalve molluscs) programme. (<http://www.foodstandards.gov.scot/food-safety-standards/advice-business-and-industry/shellfish/shellfish-results>) Elevated levels from this monitoring would be reported to the Incidents database.
- The Veterinary Medicines Directorate publish a summary of their monitoring of "Residues of veterinary medicines in food". Again the most elevated levels would be reported to the FSA as incidents. (<https://www.gov.uk/government/collections/residues-statutory-and-non-statutory-surveillance-results>)

The classification for of RASFF Hazard. Country of Origin and Food Commodity are taken from the RASFF database. EFSA provide no definition for these fields, instead allowing them to be defined by common usage. The Notifier type classification is unique to the Incidents database.

Common pitfalls in interpreting the data

- Many types of incidents occur sporadically and so tend not to be spread evenly across time.
- The number of notifications related to a given issue will depend on the level of testing and investigation being carried out. This in turn will be influenced by changing concerns and priorities as new issues emerge and others are managed.
- Food business operators and local authorities are legally obliged to report every food incident that they identify. However, the frequency of notifications by other organisations and government bodies can be affected by revisions to reporting practices and policies.
- Natural chemical contamination incidents are likely to be influenced by the weather, as are fires and other environmental contamination incidents.
- The correct classification of notifications can be a matter of judgement, particularly where an incident involves multiple threats to safety or quality.

Therefore the number of notifications will not generally be a reliable indicator of the underlying level of food risk. Instead, it is rather a measure of how many incidents of which the FSA are made aware.

Trade-offs between Output Quality Components

Trade-offs are the extent to which different aspects of quality are balanced against each other.

No analysis has been made about the trade-offs between different aspects of quality. However, the need for accurate, clear statistics has been prioritised over timeliness. This is due to the lack of user need for earlier publication.

Furthermore, the Incident database contains a wide range of information (often in free-text fields) that could be used to classify incidents. Timeliness and the available resource limit what can be included in the report. Its content is restricted to areas of known user interest where reasonably accurate results can be produced.

Assessment of User Needs and Perceptions

The processes for finding out about users and uses, and their views on the statistical products.

The Annual Report asks its readers to provide feedback and provides contact details. However, no responses have been received from users outside the FSA. Internal users within the Agency are represented by the Incidents Database project team. Their input has shaped the layout and content of the current Report. This has led to a number of changes to the Annual Report. Furthermore, an enhanced online incident report form was introduced from August 2007.

No other assessment of user satisfaction has been performed. Usage has been assessed by internet and Twitter searches for mentions of the Report. A user consultation exercise is planned for this year.

There are no major gaps in key user needs to our knowledge. There are infrequent requests for more detailed breakdowns, usually by specific product type

Performance, Cost and Respondent Burden

The effectiveness, efficiency and economy of the statistical output.

The collection, extraction and editing of the incidents data are necessary as for the day-to-day management of incidents. Therefore, the additional costs of providing the Annual Report are limited to tabulation of the data and providing the commentary and background information. Usually this accounts for about 20 person-days of staff time.

Confidentiality, Transparency and Security

The procedures and policy used to ensure sound confidentiality, security and transparent practices.

The Incidents Database cannot be fully confidential, as some individual incidents need to be publicised for reasons of public safety. Therefore, notifiers provide details about themselves on a non-confidential basis. Nevertheless, as the Annual Report only provides incidents at an aggregate level, it is not possible to identify individual notifiers. Therefore, no Statistical Disclosure Control practices need to be employed.