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efsa
European Food Safety Authority

EFSAnews

#26 - NOV 2012

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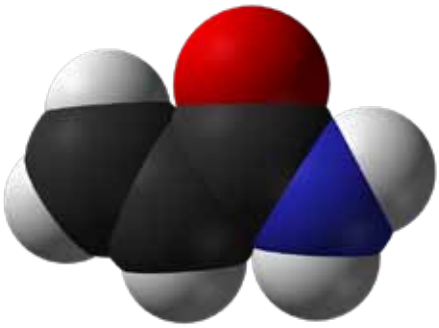
Data collection

Report reveals levels of acrylamide in food

EFSA has published its annual update report on levels of the chemical contaminant acrylamide found in food. The report, which covers 25 EU countries for the monitoring period 2007-2010, shows that for the majority of the food categories assessed levels remain largely unchanged since the last report.

This is the fourth annual report on acrylamide monitoring in food published by EFSA since 2009. The report was prepared by the Authority's Dietary and Chemical Monitoring Unit using 13,000 data points on acrylamide levels in food. Since 2008, the number of analytical results submitted to EFSA has declined, limiting the reliability of the trend analysis; in the 2010 monitoring period, on average, only two-thirds of the minimum number of samples set by the European Commission per food category were submitted.

Acrylamide is a chemical compound that typically forms in starchy food products such as potato crisps, French fries, bread, biscuits and coffee, during high-temperature processing, including frying, baking and roasting.



An EFSA statement in 2005 noted that there may be a health concern with acrylamide which is known to be both carcinogenic and genotoxic. Member States are requested to perform yearly monitoring of acrylamide levels and EFSA

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Data collection

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Data collection: EFSA's role

Collection of accurate and reliable data is a prerequisite for informed risk assessment and risk management. Both scientists carrying out risk assessments and decision-makers in Europe need up-to-date and comparable information across Member States on hazards found in the food chain and on food consumption.

When a new hazard is found in the food chain, scientists must quickly assess who is exposed, through which foods and at what levels. By collecting data at the EU level we can find out, for example, how often foods are contaminated with bacteria or chemicals and at what levels. This information, combined with reliable information on food consumption in the Member States, makes it possible for risk assessors to examine consumer exposure to a certain hazard at both EU and national level. The assessments allow scientists to make recommendations for the prevention, reduction, and monitoring of these hazards in the food chain.

Access to harmonised data supports risk managers in making informed decisions to protect and promote consumer health; for instance in assessing how dietary intakes of salt compare with targets set for healthy diets. Such data can also be utilised in evaluating the effectiveness of EU programmes aimed at reducing the occurrence of biological and chemical risks in food and in animal populations.

At EFSA, ongoing data collection activities to assess and monitor trends

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assesses these data for compilation in an annual report.

In terms of the results, there were downward trends in acrylamide levels in 'processed cereal-based foods for infants and young children' and the sub-categories 'non-potato based savoury snacks' and 'biscuits and rusks for infants and young children'. There were rises in the 'coffee and coffee substitutes' category and in the sub-categories 'crisp bread', 'instant coffee' and 'French fries from fresh potatoes' though for the latter this was not consistent across Europe.

EFSA will continue to collect acrylamide monitoring data and will update in 2013 its European exposure assessment (last carried out in 2011) based on more recent data on acrylamide levels in food as well as new food consumption data. At the request of the food safety agencies in Denmark, France, Germany and Sweden, the Authority is also in discussions with these national food safety agencies and other members of EFSA's Advisory Forum, regarding recent scientific developments on acrylamide and its possible impact on public health.

Salmonella in humans continues to fall, Campylobacter rises

The latest annual report on zoonoses and food-borne outbreaks in the European Union shows that *Salmonella* cases in humans fell by almost 9% in 2010, marking a decrease for the sixth consecutive year. The prevalence of *Salmonella* in poultry is also declining.

Campylobacteriosis remains the most reported zoonotic infection in humans since 2005 and the number of cases has been increasing over the last five years.

The report, published in 2012 by EFSA and the European Centre for Disease Prevention and Control (ECDC), supports the European Commission and EU Member States in their consideration of possible measures to protect consumers from risks related to zoonoses.

"The positive progress in the reduction of *Salmonella* cases in humans and poultry is continuing and the majority of Member States met the targets set for the reduction of *Salmonella* in different poultry flocks in 2010," an EFSA spokeswoman said.

According to the report, the likely main reasons for the decrease in human salmonellosis cases are the successful EU *Salmonella* control programmes for reducing the prevalence of the bacteria in poultry populations, particularly in laying

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hens. *Salmonella*, which usually causes fever, diarrhoea and abdominal cramps, accounted for 99,020 reported human cases in 2010 compared to 108,618 in 2009. *Salmonella* was found most often in chicken and turkey meat.

Johan Giesecke, Chief Scientist at ECDC, said: "The increasing trends in human cases of *Campylobacter* highlight the need for further joint efforts. For this, EFSA and ECDC will continue to strengthen their links with all important partners and foster collaboration in order to reduce the occurrence of these diseases in the EU."

In 2010, 212,064 *Campylobacter* cases in humans were reported, an increase for the fifth consecutive year, with 7% more cases compared to 2009. In foodstuffs, *Campylobacter*, which can cause diarrhoea and fever, was mostly found in raw poultry meat. To combat *Campylobacter*, the European Commission is carrying out a cost-benefit analysis of the control measures for the bacteria at different stages of the food chain. EFSA has supported this work by analysing an EU-wide baseline survey

on the prevalence of *Campylobacter* in chickens and providing scientific advice on possible reduction measures.

The report also gives an overview of other food-borne diseases. Human cases of Shiga toxin/verotoxin-producing *Escherichia coli* (STEC/VTEC) have been increasing since 2008 and amounted to 4,000 reported cases in 2010. Among animals and foodstuffs, VTEC was most often reported in cattle and cattle meat.

A decrease for the fifth consecutive year was recorded for human cases of *Yersinia enterocolitica*, a bacterium mostly found in pigs and pig meat, with 6,776 cases reported in 2010. The number of human cases of trichinellosis – a parasitic zoonosis – decreased significantly in 2010 (223 cases compared to 748 in 2009) with a corresponding reduction of *Trichinella* findings in pigs, an important source of the parasite.

Listeria infections in humans showed a slight decrease, with 1,601 confirmed cases in 2010. In 2013, EFSA will be analysing the results of an EU-wide baseline survey on *Listeria* in ready-to-eat foods including smoked fish, heat-treated meat products and soft and semi-soft cheeses, which will provide further valuable information on its prevalence and the factors contributing to this in these high-risk foods. To complement this work, EFSA and ECDC will carry out a joint molecular typing analysis for human and food *Listeria* strains to identify potential links between human cases and food.

The report says that 5,262 food-borne outbreaks were recorded in the EU in 2010, slightly less than in 2009. These reported outbreaks affected over 43,000 people and caused 25 deaths; however, these figures may in reality be higher due to under-reporting.

The most frequently reported causes were *Salmonella* (31% of all outbreaks), viruses such as norovirus (15%) and *Campylobacter* (9%). The most important food sources in the outbreaks were eggs and egg products, mixed and buffet meals and vegetables and derived products. The importance of vegetables as sources of outbreaks increased from previous years.

The report covers 15 zoonotic diseases, including Q fever, brucellosis, bovine tuberculosis, rabies and the parasitic zoonoses echinococcosis.

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over time are carried out mainly by three units. The Dietary and Chemical Monitoring Unit deals with the collection and analysis of data on food consumption and occurrence of chemical contaminants in food and feed for chemical exposure assessments at European level. The Biological Monitoring Unit collects and analyses data on occurrence of zoonoses, zoonotic agents in food, feed and animals as well food-borne outbreaks in the EU. In addition it gathers data on antimicrobial resistance in certain zoonotic agents and occurrence of microbiological contaminants. The Pesticides Unit collects and analyses data on pesticide residues.

Cooperation in data collection across Europe is key in order to harmonise approaches and thereby facilitate information sharing between countries. EU-wide data can also reflect important differences between Member States.

EFSA's Strategy on Cooperation and Networking between EFSA and EU Member States identifies exchanging scientific information as a key element for harmonising approaches to risk assessment. The main areas of EFSA's data collection work are:

- zoonoses, antimicrobial resistance and food-borne outbreaks;
- food consumption;
- contaminants;
- pesticides.

Zoonoses, antimicrobial resistance and food-borne outbreaks

EFSA analyses data on zoonoses, antimicrobial resistance (AMR) and food-borne outbreaks across the EU,

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Data collection

using data submitted annually by the Member States. EFSA publishes, in collaboration with the European Centre for Disease Prevention and Control (ECDC), annual Community Summary Reports based on these data.

Moreover, EFSA analyses the EU-wide baseline surveys on zoonotic agents, such as *Salmonella* and *Campylobacter*, and on AMR. These surveys are fully harmonised and therefore provide comparable values for all Member States. Survey results are used to set EU reduction targets or to consider needs for specific actions at EU level.

EFSA has also published several reports providing guidance for Member States on the monitoring and reporting of zoonoses and AMR and food-borne outbreaks. EFSA has developed methods to analyse these data.

Food consumption

EFSA's Comprehensive European Food Consumption Database contains detailed data on food consumption patterns in a number of EU countries.

However, EU Member States use different methods to collect such data, which makes it difficult to carry out EU-wide analyses or country-to-country comparisons. In close cooperation with the EU Member States, through the EU Menu project, EFSA is therefore supporting harmonised food consumption data collection. This should allow more efficient and accurate exposure assessments to be carried out (*see story, page 6*).

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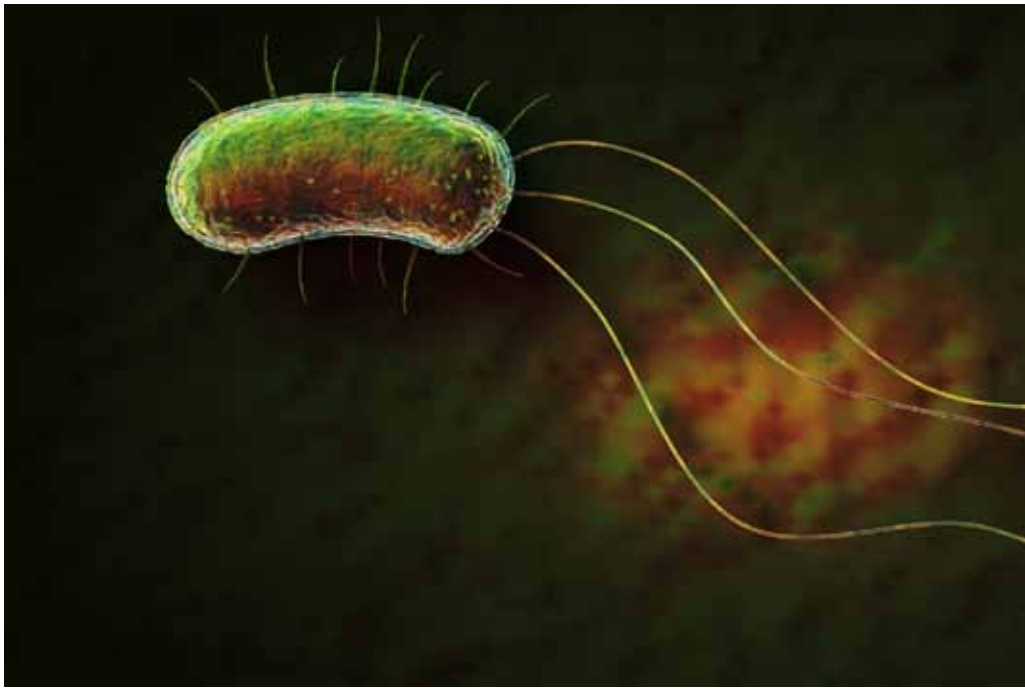

EFSA and ECDC report reveals extent of antimicrobial resistance

EFSA and ECDC have so far published two annual reports on antimicrobial resistance in zoonotic bacteria affecting humans, animals and food. The reports make an important contribution to work being carried out at EU level to fight antimicrobial resistance.

The second report, based on data collected from EU Member States for 2010 and published in 2012, shows that resistance to several antimicrobials was commonly detected in zoonotic bacteria such as *Salmonella* and *Campylobacter*, which are the main causes of reported food-borne infections in the EU. The occurrence of resistance in animals and food remained similar to that of previous years.

Catherine Geslain-Lanéelle, EFSA's Executive Director, said: "Zoonotic diseases are important public health threats in the EU and resistance of zoonotic bacteria to antimicrobials used to treat these illnesses is an increasing concern both at the European level and globally. EFSA recognised this early on in its establishment and has been collecting important data and reporting on antimicrobial resistance trends in animals and food since 2004.

"In the framework of the European Commission's Action Plan against Antimicrobial Resistance, EFSA will further strengthen its efforts in this field and cooperation with key partners such as ECDC and the European Medicines Agency."

Marc Sprenger, ECDC's Director, added: "Campylobacteriosis is the most frequently reported zoonotic infection in humans and the high resistance of *Campylobacter* to several antimicrobials, including ciprofloxacin, is of increasing concern at EU level. ECDC has long been aware of the threat posed by antimicrobial resistance, which is why we have been collecting surveillance data and co-ordinating the European Antibiotic Awareness Day [held annually on 18 November]. This new report is another crucial step forward.

"With harmonised surveillance of human and animal data we can act to prevent its further spread in humans. ECDC will continue strengthening its links with all key stakeholders including EFSA to provide scientific support to risk managers in order to efficiently tackle antimicrobial resistance."

Antimicrobials are used in human and

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veterinary medicine to eliminate micro-organisms causing infections, such as bacteria. Certain antimicrobial groups – fluoroquinolones (such as ciprofloxacin), third-generation cephalosporins (such as cefotaxime) and macrolides (such as erythromycin) – are defined as critically important for the treatment of serious human infections by the World Health Organization. In food-producing animals, the antimicrobials used to treat various infectious diseases may be the same or similar to those used for humans.

Resistance to antimicrobials occurs when micro-organisms develop mechanisms that reduce their sensitivity to the antimicrobials and render treatments with antimicrobials ineffective. Resistant bacteria can spread through many routes. Zoonotic bacteria that are resistant to antimicrobials are of particular concern as they can be transmitted from animals to food and humans, and may compromise the effective treatment of infections in humans.

The report shows that a high proportion of *Campylobacter* in humans is resistant to the critically important antimicrobial ciprofloxacin whereas low resistance was recorded for another critically important antimicrobial, erythromycin.

High resistance was also recorded for commonly used antimicrobials such as ampicillin and tetracyclines. In animals and food, a very high proportion of *Campylobacter* is resistant to ciprofloxacin, particularly in chicken but also in pigs and cattle.

In humans, a high proportion of *Salmonella*, which accounted for almost 100,000 reported human cases of salmonellosis in 2010, is resistant to common antimicrobials but resistance to critically important antimicrobials for treating humans is relatively low. In animals and food, high levels of resistance in *Salmonella* were reported for commonly used antimicrobials as well as for ciprofloxacin in poultry.

Resistance in indicator *E. coli* in poultry was high to ciprofloxacin while in indicator enterococci in animals high resistance was recorded to erythromycin.

The report also includes information on the occurrence of Meticillin-resistant *Staphylococcus aureus* (MRSA) in animals and food from 11 EU Member States and one EFTA country. MRSA was detected in a number of different animal species, including pigs, poultry, cattle, dogs and horses as well as in some food of animal origin.

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Contaminants

EFSA regularly publishes calls for data on scientific subjects specific to its remit. For example, the Authority has published calls on acrylamide and furan, both of which are contaminants with toxic properties that may be formed in foods during food manufacturing or home cooking under particular conditions. Data collection has also supported risk assessments on several other substances, for example aflatoxins, heavy metals, and melamine.

EFSA produces an annual report on veterinary medicinal residues in food from animals, based on data submitted by Member States.

Data collection also supports risk managers in setting legislative limits and monitoring in the food chain levels of persistent organic pollutants, such as dioxins and polychlorinated biphenyls.

Pesticides

EFSA prepares an annual report that gives an overview of pesticide residues in food across the EU and assesses the exposure of consumers through their diets. The results help decision-makers to consider new or revised management measures.

In addition, data collection is needed for other tasks EFSA is required to carry out; for example the re-evaluation of substances authorised in foods such as food additives. Data on specific issues such as animal welfare practices and indicators, farming systems, nutrition or ecological and environmental information may also need to be collected for the risk assessments and guidance documents produced by EFSA Panels.

Profile

Mary Gilsenan

Mary joined EFSA in July 2012 as Head of the Dietary and Chemical Monitoring Unit which deals with collection, collation and analysis of food consumption and chemical occurrence data for exposure assessments at EFSA.

Prior to joining EFSA, Mary worked at Leatherhead Food Research in the UK where she was Head of its Global Regulatory Services department. She has also worked for Unilever global R&D in the Netherlands managing studies to substantiate claims within the realm of cognitive performance. Other previous roles include nutrition communication for Unilever in the UK and a research position at the Institute of European Food Studies in Ireland.

Mary holds a degree in human nutrition from the University of Ulster, Northern Ireland, and a PhD from Trinity College Dublin on the application of probabilistic modelling to food additive exposure assessments.

Why did you join EFSA?

I have always been interested in the risk assessment work at EFSA and in the areas of exposure assessment and nutrition in particular. Since EFSA was established, considerable progress has been made in the area of data collection – leading to the provision of more refined estimates of exposure to food-borne chemicals and nutrients for EFSA's panels. I welcomed the opportunity to build on the progress that has been made so far and to advance exposure

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Data collection

FOOD CONSUMPTION

Knowing what Europeans eat is essential for protecting consumers

Are intakes of food additives safe for all population groups? Are consumers exposed through their diet to high levels of heavy metals such as cadmium? Which population groups consume most shellfish? Could these foods include marine biotoxins which may be harmful to health? Does the food we eat provide us with the nutrition we need?

These are some of the many questions that EU food risk assessors at EFSA and in Member States address in their work every day.

EFSA has made considerable progress in recent years to bring together data on food consumption habits. In 2007, the Authority initiated the collection of data from national dietary surveys in all Member States and its compilation in a new Concise European Food Consumption Database. This tool provided data on food consumption for adults in EU countries according to broad categories (e.g. milk and dairy-based products) and subcategories (e.g. cheese) and was primarily used for exposure screening (identifying patterns or habits of consumption).

It also served as a starting point for EFSA to develop the Comprehensive European Food Consumption Database which provides more extensive and detailed information for a majority of EU countries in refined food categories and specific population groups, including children. The database enables quick screening and more precise estimates of chronic and acute exposure to substances and possible hazards that may be found in the food chain.

These databases are important tools in the risk assessment work of EFSA and other actors. However, EU Member States use different methods to collect food consumption data, which makes it difficult to carry out EU-wide analyses or comparisons between countries. EFSA has therefore taken steps to harmonise the collection of food

consumption data to allow for more comprehensive exposure assessments. The "What's on the Menu in Europe?" (EU Menu) project aims to provide standardised information on what people eat in all countries and regions across the EU. This data will enable even more accurate exposure assessments in Europe and support risk managers in their decision making on food safety.

EFSA continues to extend and update the databases with new data collected by Member States when available. Thanks to this cooperation, food consumption summary statistics for different countries and age groups, previously unavailable at EU level, are now accessible for use by all food safety and public health experts.

Joint guidance aims to harmonise dietary exposure assessments

EFSA, the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) have agreed guidance for a harmonised approach to assessing dietary exposure to chemicals.

The organisations agreed that the Total Diet Studies approach (TDS) is an effective tool to estimate population dietary exposure to both harmful and beneficial chemicals across the overall diet. The guidance proposes general principles for harmonising TDS methods internationally,

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assessment methodology at EFSA. In addition, EFSA's multi-cultural and multi-disciplinary work environment is very stimulating and appealing to me.

Why is data collection so important to risk assessment?

In the absence of data, assumptions are typically applied in risk assessments which usually err on the side of conservatism. When we have access to good data, we can use these data in place of default assumptions to generate more realistic exposure estimates as part of EFSA's risk assessments.

What are the biggest challenges facing you and your colleagues?

Within the area of data collection, the DCM unit's biggest challenge is processing some 800,000 analytical results submitted to us as part of our annual call for chemical occurrence data. Receipt of large datasets that are not submitted in accordance with EFSA's protocol for describing samples in a standardised way – called standard sample description – present significant challenges for data managers.

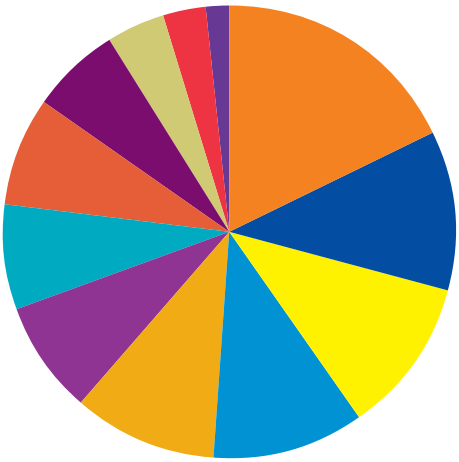
Within the area of dietary exposure assessments, one of the key challenges for me and my colleagues relates to harmonisation of exposure assessment methodologies across the different units of EFSA, as well as quantification of uncertainty in exposure assessments.

What single change would you like to see in your area of work?

I would like to see more industry data submitted within the framework of our continuous annual call for occurrence data.

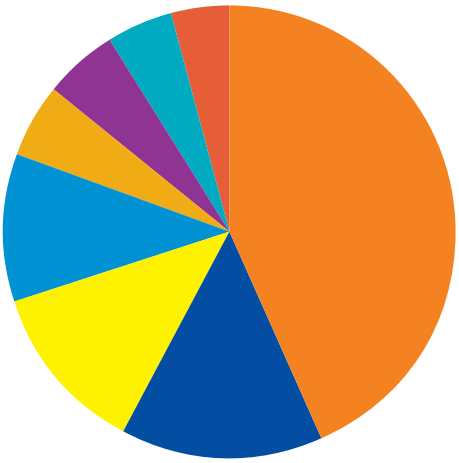
Zoonoses: facts & figures

Distribution of strong evidence food-borne outbreaks by food vehicle in the EU, 2010



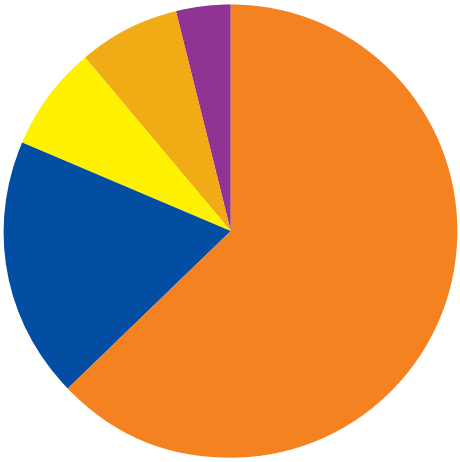
- Eggs and egg products 22.1 %
- Mixed or buffet meals 13.9 %
- Other foods 8.9 %
- Vegetables and juices and other products thereof 8.7 %
- Crustaceans, shellfish, molluscs and products thereof 8.5 %
- Bakery products 7.9 %
- Fish and fish products 6.3 %
- Broiler meat (Gallus gallus) and products thereof 6.0 %
- Other or mixed meat and products thereof 6.0 %
- Pig meat and products thereof 4.9 %
- Bovine meat and products thereof 3.3 %
- Cheese 2.3 %
- Fruit, berries and juices and other products thereof 1.3 %

Distribution of food vehicles in strong evidence food-borne outbreaks caused by Salmonella in the EU, 2010



- Eggs and egg products 43.7 %
- Bakery products 14.4 %
- Mixed or buffet meals 12.3 %
- Other food 10.6 %
- Broiler meat (Gallus gallus) and products thereof 5.3 %
- Pig meat and products thereof 5.3 %
- Bovine meat and products thereof 4.7 %
- Other or mixed meat and products thereof 4.1 %

Distribution of food vehicles in strong evidence food-borne Campylobacter outbreaks in the EU, 2010



- Broiler meat (Gallus gallus) and products thereof 63.0 %
- Milk 18.5 %
- Mixed or buffet meals 7.4 %
- Other, mixed or unspecified poultry meat and products thereof 7.4 %
- Cheese 3.7 %

Data collection

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which if applied in Europe would provide comparable data on dietary exposure to chemicals in food.

Reliable and detailed data on the occurrence of chemical substances (e.g. nutrients, residues, contaminants) in food in combination with food consumption data are essential for exposure assessments to support scientific advice on potential risks in the food chain. The chemical occurrence data used are often derived from official food controls, whereas the overall assessments of population dietary exposure to chemicals requires representative and harmonised data collection.

The guidance from EFSA/FAO/WHO provides principles for carrying out a TDS, including the planning phase, collection of results, exposure assessment calculation and communication on the results.

A TDS consists of selecting and collecting foods representing the overall diet of a population, which are prepared as they are consumed and pooled into representative food groups before the levels of contaminants or nutrients in the foods are analysed. The results are then combined with food consumption data. This allows scientists to calculate the amount of each chemical substance that is being consumed by a specific population as part of their typical diet.

The approach is particularly suitable for estimating chronic dietary exposure. It is most efficient for estimating broadly occurring chemical substances and less appropriate for detecting chemicals that occur only regionally, seasonally or in specific foods.

While food monitoring and surveillance activities capture the presence of chemicals in individual food items, TDS provides a basis for calculating overall levels of chemical substances in the foods consumed by a population and estimating the overall impact on public health. The working group concludes that TDS can be an excellent complementary approach to existing food monitoring and surveillance programmes or an effective preliminary screening tool. Together these approaches can help experts to identify the relative importance of individual foods as sources of chemical substances in the overall diet.

TDS can also be used for screening purposes to analyse a limited number of broadly pooled food samples, providing a useful starting point for determining future priorities for detailed data collection.

The studies are conducted by several countries and there is a wealth of data available. However, harmonisation of the TDS methodology would enable comparability of results internationally and support the assessment of dietary exposure to chemical substances in multiple countries or regions. At European level, TDS would generate important information on pan-European dietary exposure to chemicals in food and could be used for tracking the impact of EU measures over time.

In the coming years, the European Commission's Directorate-General for Research and Development will fund a pan-European pilot project to harmonise data collection, identify typical foods in the overall diet and assess the dietary intake of chemical contaminants from these foods.

Residues compliance continues to rise, pesticide report shows

EFSA publishes an Annual Report on Pesticide Residues in the EU based on monitoring information received from the 27 EU Member States and two EFTA countries (Iceland and Norway). The report assesses the exposure of European consumers to pesticide residues through their diets.

The third annual report, which covers 2009 and was published in 2011, shows that compliance rates continue to rise, with 97.4% of the samples analysed falling within the permitted Maximum Residue Levels (MRLs), a rise of about one percentage point since 2008.

In the EU coordinated part of the monitoring programme, which is designed to collect directly comparable data from reporting countries and to enable dietary exposure assessment, 61.4% of samples were free of measurable pesticide residues.

Compared with 2006, the last time the same food commodities of plant origin were analysed under the EU-coordinated programme, the MRL exceedance rate has fallen from 4.4% to 1.2%. EFSA said this could be partially ascribed to the harmonisation of MRLs, which came into force in September 2008, but other factors – such as the more effective use of legislation compelling producers and other industry players to implement safety systems, and changes in the pattern of pesticide use in Europe – may have contributed to the improvement.

EFSA's Pesticides Unit, which prepared the report, emphasised that the presence of pesticides in food at a level exceeding the MRLs does not necessarily imply a safety concern. Reporting countries, which include all EU Member States, plus Iceland and Norway, analysed nearly 68,000 samples of food commodities for 834 pesticides. The number of food commodities analysed rose from just under 200 in 2008 to approximately 300 in 2009.

The introduction of a new data reporting format enabled a more accurate assessment of the long-term risks to consumers from exposure to pesticide residues. EFSA concluded that based on current knowledge long-term exposure to residues detected in major foods that make up the European diet would not raise health concerns.

The assessment of short-term acute exposure was based on worst-case scenarios – assuming the consumption of large portions of a food item containing the highest recorded residue – and EFSA concluded that risks to consumers were unlikely.

Of the 10,553 samples taken in the EU coordinated programme, a potential risk could not be ruled out for 77. MRLs were more often breached in samples from countries outside the European Economic Area (6.9% of samples) than in those from the EU and EFTA countries (1.5% of samples).

The lowest exceedance rates overall were for food products of animal origin (0.3%).

No specific MRLs have been established for organically produced commodities so those used for conventionally produced commodities are applied. The MRL exceedance rate recorded for organic produce in 2009 was lower by a factor of 7 compared to conventionally grown produce.

Data collection

Dioxins report shows drop in dietary exposure over past decade

EFSA has published a report on levels of dioxins and polychlorinated biphenyls (PCBs) in food and feed. The report reveals a general decrease in dietary exposure to dioxins and dioxin-like PCBs, comparing the period 2008-2010 with 2002-2004, of at least 16% and up to 79% for the general population, with a similar decrease for toddlers and other children. Exposure to non-dioxin-like PCBs, a sub-set of PCBs with different toxicological properties, also decreased.

Dioxins and PCBs are persistent environmental pollutants which can accumulate in the food chain. These toxic substances can over time have adverse effects on human health and may cause cancer. EFSA collates and analyses data on dioxin and PCB contamination levels in relation to maximum levels which have been set for these substances for different categories of food and feed in the EU in order to protect consumers.

This report, which was prepared by the Authority's Dietary and Chemical Monitoring Unit, is based on 33,000 samples collected by 26 European

countries between 1995 and 2010. Levels of dioxins and dioxin-like PCBs, and of non-dioxin-like PCBs, were above the permitted maximum levels in respectively 10% and 3% of the food samples. Just over 2% of feed samples were above the maximum levels for both dioxins and dioxin-like PCBs, and non dioxin-like PCBs.

Feed and food of animal origin showed the highest levels of contamination. "Meat from eels" and "Fish liver and derived products" contained the highest average contamination levels for both dioxins and PCBs. Meat from sheep contained on average lower levels of dioxins and PCBs than meat from bovine animals.

Eggs from battery-reared hens contained significantly fewer dioxins and PCBs than those from free range or organically reared hens. Farmed salmon and trout contained on average lower levels of dioxins and PCBs than salmon and trout caught in the wild. Herring, salmon and trout from the Baltic region were more contaminated by dioxins and PCBs than those from other regions.

Overall, fish, meat and dairy products were the most important food sources. However, their relative importance to dietary exposure depended on consumer age and country of residence. The major contributor to total exposure was milk and dairy products for almost all infant and toddler groups, whereas it was fish and seafood products for most of the other population groups.

On a cautionary note, the report adds that the results may overestimate food

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contamination and population exposure due to the targeted sampling used, while potentially underestimating exposure for some population groups since not all foods are taken into account. In addition, regional variations have not been considered as all occurrence data were merged to represent a European average.

The report recommends that future monitoring targets those foods identified as main contributors to the total exposure of the population but for which the estimations of the contamination levels were not robust. In addition, full compliance with legislative requirements for analysis and reporting would facilitate future Europe-wide risk assessments.

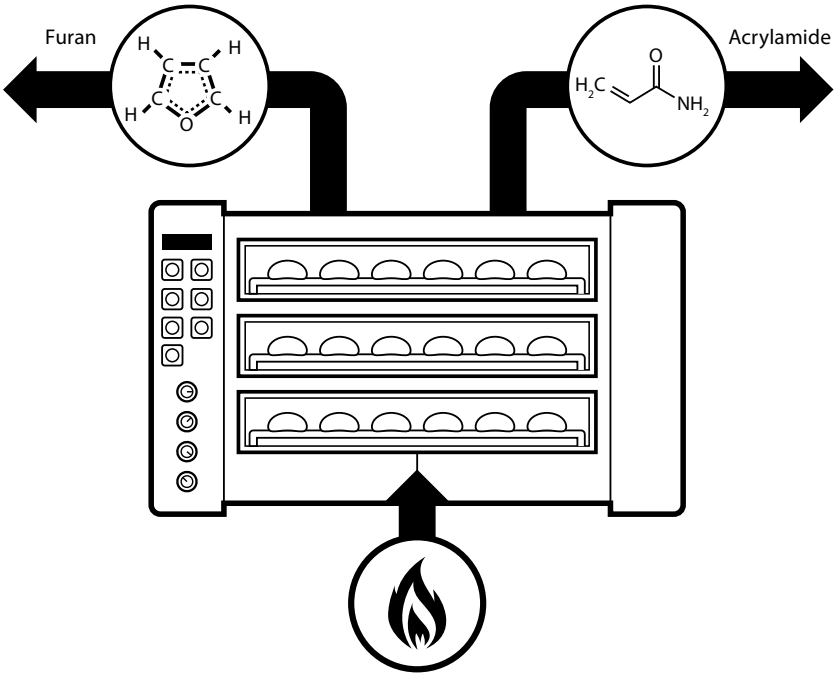
Updated report on furan in food includes new exposure estimates

EFSA has published three reports on levels of furan in food since 2009. The most recent report, which includes figures for 2009 and 2010, comprises 17% new data and is the first to include exposure estimates for different populations drawn from data from EFSA's Comprehensive European Food Consumption Database.

The exposure estimates confirm those already published in the scientific literature. In the future, this work will contribute to the body of scientific data required to undertake a comprehensive risk assessment of furan in food.

Altogether, 19 Member States and Norway have submitted data to the Authority's Dietary and Chemical Monitoring Unit (DCM). The analytical results for a total of 5,050 food samples collected between 2004 and 2010 show that furan exposure is highest in adults and in toddlers; coffee and jarred baby foods are the major contributors, respectively.

In its latest risk assessment on furan, from February 2010, the joint Food and Agriculture Organization of the United Nations (FAO)/World Health Organization (WHO) Expert Committee on Food Additives (JECFA) concluded that the margin of exposure for furan indicates a human health concern and agreed to explore possible measures that could reduce consumer exposure.



Heat treatment of food can produce process contaminants like furan and acrylamide.

Furan is an organic compound formed during heat treatment of food and has been shown to be carcinogenic in animal laboratory studies.

To allow a better estimate of dietary exposure to furan, the European Commission requests that Member States collect data on furan levels in heat-treated commercial food products which are then compiled and analysed by EFSA.

EFSA recommends that future testing for furan should target different pre-heated products for which there are currently limited data.

Data collection

FOOD ADDITIVES

EFSA uses latest science for re-evaluations

Over the past few decades the European Union has put in place a robust food safety system that helps to ensure that consumers are protected from possible food-related risks. Despite this, European consumers express concerns about the safety of what they eat. This includes possible adverse effects of food additives such as colours, preservatives or flavourings; in 2010, the presence of these substances in food was a worry for 66% of Europeans (with 25% 'very worried' and 41% 'fairly worried'). This marks a five point increase on 2005 (Eurobarometer, No 354, 2010).

All food additives currently used in the EU have been assessed for safety by EFSA and/or its predecessor, the Scientific Committee on Food (SCF). They are only included on the official EU list of approved food additives if they are considered safe for human health. In addition, whenever necessary, previous safety assessments have been reviewed and updated to take into account new scientific information pointing at a possible concern for health.

To bring this process up to date, the European Commission asked EFSA in 2010 to re-evaluate the safety of all previously authorised food additives by 2020, taking into account the latest science. Based on EFSA's scientific advice, the European Com-

mission and Member States may decide together to change the uses of additives or if needed to remove them from the EU list of authorised food additives in order to protect consumers.

There are hundreds of food additives and thousands of ways to use them for producing food and drinks. In support of EFSA's work, EU legislation specifies a timetable for their re-evaluation and the criteria for priority setting (e.g. when the food additive was last evaluated, whether or not there is new scientific evidence or an emerging

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concern). The timetable is largely organised by type of food additive; the EU has defined 26 so-called 'functional classes' of food additives, which include colours, sweeteners, preservatives, emulsifiers, antioxidants, glazing agents and others.

Food colours are being re-evaluated first as they were among the first additives to be authorised for use in the EU. Many sweeteners, in contrast, were approved more recently and are scheduled for review after 2015. EFSA can also re-prioritise a food additive in light of new information; for example, the deadline for the artificial sweetener aspartame was brought forward to 2013 due to concerns raised regarding recent studies.

EFSA's ability to re-evaluate the safety of a food additive depends greatly on the availability of scientific data. With new food additives, an applicant is required to

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Artificial sweeteners: the case of aspartame

In May 2011, EFSA was asked by the European Commission to bring forward the full re-evaluation of the safety of aspartame (E 951) from 2020 to 2012.

EFSA accepted this mandate and launched a public call for scientific data as well as a thorough literature review. EFSA received access to a large number of both published and unpublished scientific studies and datasets following the call for data, which closed on 30 September 2011.

The Authority published the full list of these scientific studies and also made publicly available previously unpublished scientific data including the 112 original documents on aspartame which were submitted to support the request for authorisation of aspartame in Europe in the early 1980s.

The Panel on Food Additives and Nutrient Sources Added to Food (ANS Panel) started its risk assessment of aspartame in early 2012. In the course of its scientific deliberations, the Panel found that there were too little data available on 5-benzyl-3, 6-dioxo-2-piperazine acetic acid (DKP) and other potential degradation products that can be formed from aspartame in food and beverages when stored under certain conditions. EFSA therefore launched an additional call for data on DKP and other degradation products of aspartame.

At EFSA's request, the European Commission agreed to extend the timeline for the full re-evaluation of aspartame to May 2013. This will allow sufficient time for EFSA's scientific experts to consider these new data and complete their comprehensive risk assessment as well as to publicly consult on their draft opinion prior to its final adoption.

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TM-AA-12-026-EN-N

Data collection

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submit a detailed technical dossier for scientific evaluation. This is not the case for food additive re-evaluations and therefore the data have to be obtained by means of a public call. Through these calls EFSA looks to acquire both new and emerging data as well as any original scientific studies submitted in support of the prior authorisation by the EU.

EFSA has already launched more than ten calls for data covering entire groups or classes of food additives, single additives or small numbers of related food additives. Through careful planning EFSA screens and organises the scientifically relevant data in advance of their consideration by EFSA's experts. The data sent by scientists, research centres, competent national authorities and other interested parties ensure that EFSA does the best evaluation possible using the most reliable and currently available scientific data.

By 2012, EFSA had completed the re-evaluation of most food colours and, looking further forward, adopted its first non-food colour re-evaluation in 2011: an antioxidant called butylated hydroxyanisole or BHA (E 320). The Authority has made headway in collecting data for the remaining colours as well as for many preservatives, antioxidants, waxes, emulsifiers and gelling agents. However, EFSA is sometimes required to issue further calls for data due to a lack of sufficient information being available.

Amongst the food additives re-evaluated, EFSA decreased the acceptable daily intake (ADI) for three food colours (E 104, E 110, E 124) since it considered in light of new data that human exposure to these colours is likely to be higher than originally assessed. As a result, in March 2012, the European Commission lowered the maximum levels of these colours that can be used in food.

Another significant impact from this work was the withdrawal of the colour Red 2G (E 128) from the market in 2007. New scientific evidence made available at that time indicated that use of this food additive could be a safety concern: as well being carcinogenic, Red 2G could also cause damage to the genetic material of human cells. EU decision-makers agreed with EFSA's experts that this food additive could not be regarded as safe for humans and it was subsequently suspended from use in the EU.