

EFSA Scientific Colloquium XIV on Food Classification

Unambiguous ambiguity – the challenge of describing food

Parma, Italy, 23 – 24 June 2010

BRIEFING NOTES FOR DISCUSSION GROUPS

These briefing notes are prepared to provide participants with the relevant background information so as to be prepared for an interactive exchange of views and expertise during the Colloquium.

Background

Today, food safety monitoring in Europe is faced with an increasingly versatile food market. Tens of thousands of processed foods are available. Diets further include thousands of composite foods prepared at homes, by catering services and in restaurants. The need to group the huge variety of foods according to different legislative requirements while taking account of a variety of features, such as biological background, source, processing method, and even type of packaging and storage method poses increasing challenges for carrying out food related exposure and risk assessments.

A number of existing databases cover various aspects of food, like nutrient composition, food consumption or the presence of potentially hazardous biological or chemical agents or compounds. Calculation of nutrient intake or contaminant exposure involves matching of corresponding food information in two or more datasets. As the unique and unambiguous identification of foods by name is not practical, the food information provided in each dataset must be matched through one or more food categorisation systems. To date, most food classification and description systems have been developed in the context of distinct applications, such as food consumption, nutrient composition or the monitoring of residues, contaminants or additives, with lacking compatibility.

EFSA is seeking to harmonise the collection and collation of food consumption data across EU Member States and similarly to harmonise the collection of occurrence data in food, covering contaminants, zoonoses, pesticides, nutrients and others. The harmonisation of these various data collections also involves procedures to clearly identify and describe foods in a uniform way, so that the information held in datasets can be interrelated. Unambiguous categorisation of inherently ambiguous food names across disciplines and cultures is proving a challenging task.

Objective

- The objective of this Colloquium is to bring together international experts from different sectors for an open scientific debate on key issues related to the categorisation of foods and to provide suggestions for a uniform food classification and description system under development in EFSA.
- Discussions will focus on the demands on a food classification systems relevant to address exposure and risk assessment needs, challenges of matching chemical occurrence data with food consumption data, food description, composite foods and new means to facilitate data exchange.

Organising Committee

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General background documents

- Greenfield H, Southgate DAT. Food Composition Data. Production, Management and Use. Food and Agriculture Organisation of the United Nations, Rome. 2003. ISBN 92 5 104949 1. Available on the INFOODS website: http://www.fao.org/infoods/publications_en.stm Part 1, Chapter 3
(ftp://ftp.fao.org/docrep/fao/008/y4705e/y4705e00.pdf)
- Ireland J, Møller A. Review of International Food Classification and Description. Journal of Food Composition and Analysis, Volume 13, Issue 4, August 2000, Pages 529-538.

INTRODUCTION

Harmonising the collection and collation of food consumption and occurrence data across EU Member States and meeting the needs of different end users in the area of food safety sets high requirements for the data collection and description of foods. In addition, it is necessary to keep the usability of the food consumption and composition data for nutrition monitoring purposes. It may not always be feasible to capture detailed characteristics of foods eaten or analysed as it may increase cost and may influence the quality of the data collection.

DISCUSSION POINTS

1. Who are the end users of the classification?
2. Which are the most demanding areas (consumption, composition, contaminants, zoonoses, pesticides, ...) in terms of food classification detail?
3. What would be the effect in each area (consumption, composition, contaminants, zoonoses, pesticides, ...) of reducing and increasing the level of detail, respectively?
4. Which degree of flexibility in the use of the food description system is necessary and how can it be realized? (Flexible definition of mandatory or optional components in different areas or in different data collections).

BACKGROUND DOCUMENTS

- Ireland J , van Erp-Baart AM , Charrondiere UR , Møller A , Smithers G , Trichopoulou A. EFCOSUM Group. Selection of a food classification system and a food composition database for future food consumption surveys. Eur J Clin Nutr 2002;56 (Suppl 2):33-45.
- Joint FAO/WHO Food Standards Programme Codex Alimentarius Commission. Codex Classification of foods and animal feeds, Draft-1, Rome 2006. (<ftp://ftp.fao.org/codex/ccpr38/pr38CxCL.pdf>).
- Languel. The International Framework for Food Description (<http://www.languel.org/>).
- McCann A, Pennington JA, Smith EC, Holden JM, Soergel D, Wiley RC. FDA's Factored Food Vocabulary for food product description. Journal of American Dietetic Association, Volume 88, Issue 3, Mar 1988, Pages 336-341.
- Pennington, J.A.T. and Hendricks, T.C. Proposal for an international interface standard for food databases, Food Additives and Contaminants, Volume 9, Issue 3, 1992, Pages 265-275.
- Commission Regulation (EC) No 178/2006 of 1 February 2006 amending Regulation (EC) No 396/2005 of the European Parliament and of the Council to establish Annex I listing the food and feed products to which maximum levels for pesticide residues apply (Text with EEA relevance). Available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:029:0003:0025:EN:PDF>

INTRODUCTION

EFSA is seeking to harmonise the collection and collation of food consumption data across EU Member States and similarly to harmonise the collection of occurrence data, covering, contaminants, zoonoses, pesticides, nutrients and others. A working group on a uniform Food Classification and Description System for EFSA was established in 2009. The proposals of the WG developed so far will be presented and discussed.

DISCUSSION POINTS

1. Does the presented concept of the system meet the needs of all areas to be covered?
2. What are the major challenges/obstacles for using the presented concept at EFSA as well as in the Member States?
3. Which additional features would improve the system and make it better suitable to operational use in the Member States?
4. How should the system be offered to users? Which formats? As web application or service?
5. How could the updating of the system be organised? Who should have which role?

BACKGROUND DOCUMENTS

- Mandate to develop a food classification and description system for exposure assessment. Mandate number M-2009-0135. Accessible through: <http://registerofquestions.efsa.europa.eu/roqFrontend/questionsListLoader?panel=ALL> (by filling out M-2009-0135 in the field 'Mandate Number').

The proposals of the WG developed so far will be presented and discussed during this discussion group.

INTRODUCTION

Composite foods contain one or more ingredients and are prepared at home, by food industry, by catering services or in restaurants. Identifying and organising composite foods in a hierarchical structure is challenging, since they do not fit into food classes/groups designed for raw agricultural commodities or simple food ingredients. However, risk analysis requires clear identification and quantification of the different sources of food borne exposure.

The nutrient contents of composite foods are usually estimated indirectly by using recipes, with application of factors for weight changes in cooking, and factors for changes in nutrient content during cooking. Similar concepts are applicable also when evaluating the occurrence of chemical contaminants.

The EFSA classification does not yet cover how to deal with composite foods. The outcome of this discussion group will provide valuable input for the upcoming work on composite foods in the EFSA food classification working group. Which strategies are efficient, operable and realistic to implement?

DISCUSSION POINTS

1. Are there different needs with respect to composite foods in the different areas (consumption, composition, contaminants, zoonoses, pesticides, ...)?
2. Contamination of food may be related to the preparation and processing of a composite food or may be attributable to a single ingredient of the composite food. Is there a suitable system to capture information, both on the composite food as well as on ingredient level, and how should these foods be classified in a FCDS?
3. How to fit simple food ingredients and complex composite food in a unique view, suitable for exposure analysis?
4. What type of information (such as yield, retention, weight loss factors, and standard recipes) is required to adequately use the food classification system to describe and quantify ingredients of composite foods?

BACKGROUND DOCUMENTS

- Bognár and Piekarski. Guidelines for Recipe Information and Calculation of Nutrient Composition of Prepared Foods (Dishes). Journal of Food Composition and Analysis Volume 13, Issue 4, August 2000, Pages 391-410.
- Reinivuo H, Bell S, Ovaskainen M-L. Harmonisation of recipe calculation procedures in European Food composition databases. Journal of Food Composition and Analysis Volume 22, Issue 5, August 2009, Pages 410-413.
- Unwin, I.D. EUROFOODS Guidelines for Recipe Information Management. Journal of Food Composition and Analysis Volume 13, Issue 4, August 2000, Pages 745-754.
- EuroFIR reports on recipe calculation available on:
http://www.langua.org/langua_linkcategory.asp?CategoryID=9&Category=Recipe+calculation+and+nutrient+retention+and+loss+factors
- Proposed scheme by CDC for categorising foods implicated in investigations of outbreaks of food-borne diseases available on: <http://www.liebertonline.com/doi/pdfplus/10.1089/fpd.2009.0350>.

INTRODUCTION

The need to collect detailed food consumption information has increased during recent years, due to the increasing use of food consumption data in areas of both nutrition and food safety. At the same time the supply of food has grown and become more complex. The most suitable methods for food consumption data collection for risk assessment purposes are the food record method (e.g. repeated food record data) and interview methods (repeated 24 h recall + additional FPQ / FFQ on consumption of certain foods). These methods allow collection of details of foods, only if the method is tailored to capture these details. To use food consumption data for risk assessment purposes, food consumption data need to be linked to occurrence data of potentially hazardous biological or chemical agents or compounds. Due to different needs within the field of risk assessment (e.g. contaminants, pesticides, zoonoses), different demands are made regarding necessary details of food consumption data. In the ideal situation, food consumption data are collected at the highest level of detail. However, in practice subjects of the survey are not always able to report all details of the foods they consume.

DISCUSSION POINTS

1. What is the optimal amount of detail to be collected within food consumption surveys to meet the risk assessment needs of EFSA and EU Member States?
2. Which other data sources are available to fill possible gaps in detail as obtained from food consumption surveys for risk assessment purposes?
3. What are the benefits and drawbacks of food consumption data, where foods consumed are identified via a food list, and facets and descriptors (and possibly including recipe information)?
4. Which facets/descriptors would need to be included in the food classification system to better meet risk assessment needs? Which of these facets/descriptors can realistically be obtained through an interview (or through food records)?

BACKGROUND DOCUMENTS

- European Food Safety Authority: European Food Consumption Database: Current and medium to long-term strategies. Report of the 3rd Scientific Colloquium, 28-29 April 2005, Brussels, Belgium.
Available online: <http://www.efsa.europa.eu/en/colloquiareports/colloquiaconsumption.htm>
- European Food Safety Authority; General principles for the collection of national food consumption data in the view of a pan-European dietary survey. EFSA Journal 2009; 7(12):1435. [51 pp.]. doi:10.2903/j.efsa.2009.1435. Available online: <http://www.efsa.europa.eu/en/scdocs/doc/1435.pdf>
- Slimani N, Ferrari P, Ocké M, Welch A, Boeing H, Liere M, Pala V, Amiano P, Lagiou A, Mattisson I, Stripp C, Engeset D, Charrondière R, Buzzard M, Staveren W, Riboli E. Standardization of the 24-hour diet recall calibration method used in the European prospective investigation into cancer and nutrition (EPIC): general concepts and preliminary results. European Journal Clinical Nutrition, Volume 54, Issue 12, December 2000, Pages 900-917.