

Publishable summary

Background: Presently there are a number of bottlenecks in exposure assessment. These include access to national food consumption databases, difficulty with food categorisation, limited knowledge on food chemical occurrence, lack of data on food chemical concentration and on packaging substances. FACET will attempt to answer these through the creation of a food chemical exposure surveillance system, which will focus on the specific concerns of flavourings, food additives and food contact materials. The project involves 20 partners from across the EU and the stems from the collaboration of academia, industry, SME's and national governmental agencies. FACET began in September 2008 and will continue for 4 years.

Expected Results: These include the creation of a database of targeted food chemical concentrations, the establishment of a migration modeling framework for packaging materials into foods, the construction of a tiered food intake database for the relevant target food chemicals, the development of a PC-based, publicly available software programme which will be populated with the data generated by the project, and to estimate exposure assessment using a probabilistic model.

Work to date: For the three chemical groups, much of the work in the initial stages of the project has involved the selection of priority substances for further examination (flavourings n=41, food additives n=32), and in the characterisation of chemical substances through preparation of detailed inventory lists. For food additives, the objective is to evaluate high risk additives (where the theoretical estimated intakes are higher than the ADI). But it will also illustrate different situations for additives authorized in the EU for future exposure assessments. Linking these additives with foods consumed in representative regions of the EU, and with concentration data is underway. In relation to flavourings, data for both added and natural substances will be analytically determined for a limited number of target substances. Classification of foods according to a hierarchical tiered system, which meets the needs of the three chemical groups, has also been realised. At present, database managers from eight countries (Ireland, UK, France, Italy, Finland, Poland, Hungary and Portugal) are coding their national consumption surveys according to this tiered system. A targeted survey of the occurrence of food additives, flavourings and food contact materials available in each of the eight countries is nearing the end of the planning phase (minimum of 3000 products). A database for entry of information contained on these product labels is almost complete. Cluster analysis of consumption patterns in EU countries has been completed using available data. This technique has provided a method for identifying countries with similar food consumption profiles. During this first period, the development of the exposure model has begun and has involved an investigation of techniques to improve the treatment of uncertainty in the probabilistic exposure model. Development of the PC-based exposure assessment software tool has commenced. The first prototype was released in January 2010, with plans to release a prototype of the software approximately every 3 months, adding functionality with each release. Feedback from the consortium will guide the development of subsequent versions. A software specification for the FACET exposure tool was developed during this period and a final draft is currently under review. Work on model validation will commence during the next 18 month period, when adequate data will come on-stream to allow the model to be tested.

Expected impact: The overall impact of FACET will be evident at a number of levels including protection of the consumer, fostering innovation in the food chain, driving the scientific approach, influencing international food regulatory affairs and through a focused risk management approach.

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