

products are being developed. The improvement of CHEF manager will enable linkages among relevant databases and improve the efficiency of food composition data management.

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Development of an information system on inherent bioactive compounds in food plants. Andy D. Walker, Robert K. Heaney, Michael J. C. Rhodes,* G. Roger Fenwick, Roger D. Preece & Caroline Epps.

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An information system containing data on occurrence and levels of inherent bioactive compounds in food plants has been designed and validated. The system uses a relational database management system running under Microsoft Access version 2, and is currently operating on a IBM 486 PC clone. The user interacts with the system via a series of screen based forms. Initial user trials have provided very positive feedback and have indicated that the interface design is easy to use. The data structure is such that the system can be used to access both numerical data on compositional levels of compounds within food plants and textual information on factors affecting compositional variation such as storage, agronomy and processing, together with associated references.

The system currently holds critically assessed data on several classes of compounds (glycoalkaloids, alkenyl benzenes, glucosinolates, organic hydrazines, saponins, furanocoumarins, cucurbitacins, oligosaccharides) in 120 food plants and is currently being expanded to include assessed data on a wider range of compound classes (xanthine alkaloids, cyanogenic glycosides, coumestans, isoflavones, trypsin inhibitors, hemagglutinins, lathrogens, biogenic amines, oxalate, pyrrolizidine alkaloids). The feasibility of merging the data within this UK information system with a similar system currently used within Denmark is actively being explored. This programme is funded by the Ministry of Agriculture, Fisheries and Food.

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Improving our confidence in intake assessments: methodologies for maximising the use of existing data. Barbara Petersen.

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Dietary intake assessments are needed for evaluation of the safety of proposed new food additives as well as for the evaluation of the nutritional adequacy of today's diets. A recent evaluation by Nutriscan highlighted the difficulties of using existing food consumption information for this purpose. In this paper we will evaluate the opportunities for improving our assessments by taking advantage of the strengths of the different methodologies and by using current computer technologies for analyzing the data using Monte Carlo methods. We will

also propose methods for using Total Diet Studies and other monitoring information to more realistically estimate dietary intake. Specifically, we will present assessments using the Danish Budget Method, UK data and US data to identify differences in methodology versus differences in data. Since no single method for survey will be best for all situations, we will propose the development of criteria for different types of analyses and suggest appropriate data and methods to achieve those criteria. Finally, we will propose methods for accessing these different data types through a Languag-based International Interface Standard.

Development of a food composition database: methods and goals for the future. Simonetta Salvini. The Italian Food Composition Database: A Joint Project.

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Nutritional epidemiological studies have highlighted the importance of diet in chronic disease. In Italy, food composition tables that are used to transform measured dietary intake into energy, macro- and micro-nutrients are based on limited lists of food items and nutrients. Extensive databases are needed for the analysis of the food consumption of large populations, such as those investigated in epidemiological studies. Databases are usually compiled starting from the existing local food composition tables completed by means of other published material and food composition tables from other countries. The National Nutrition Institute of Rome, Italy (INN) developed a large database for the analysis of data from the national survey 1980-84: a collaborative effort, coordinated by the European Institute of Oncology, was organised between the INN and several institutions to revise and complete that database. In particular, some nutrients were added, and special care was taken in trying to have complete data for all foods. An *ad hoc* software was developed to manage the data: for each nutrient the source of the value is stored, together with its original code number and details of all calculations, wherever appropriate.

The strategies to revise and complete this database are presented, together with information on the sources of nutrient data, discussion of the main problems encountered, as well as suggestions for the future development of the project.

Food composition data as a tool in food and nutritional surveys: which issues does their utilization pose? Aida Turrini.

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Food composition is essential to process data from food and nutritional studies. Because of the issues related to the quality of food composition databases, i.e. missing values and analytical methods, their utilisation poses

several problems. Firstly, the number of food items included in a food composition table is crucial. However, the most complete and up-to-date food composition table can not include analyses of all food products (varieties and brands). Secondly, variability of composition depends on several factors (seasonal variations, technology, home treatments, etc.). Furthermore, correct sampling procedures allow only a partial control, particularly for non-structural substances such as residues, contaminants, etc. Comparison of nutrients intakes estimated by applying food composition tables and by other methodologies points up the cited problems. For example, in 1991 at the Istituto Nazionale della Nutrizione (INN) a comparison based on a total diet study was carried out, in which the results did not match with the application of food composition tables. On the basis of these results, we would like to discuss in this paper the necessity to develop further research to better understand the role of food composition data, total diet and/or their combination.

Problems in the development of the food intolerance databank in Hungary. Ernő Dworschák,^a Mária Barna,^b Márta Horacsek,^a Éva Gelencsér^c & Erzsébet Aubrecht.^c

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In Hungary, the Food Intolerance Databank is under development according to the principles of the European Food Intolerance Databank Project. There are some problems encountered while characterizing the allergen components of the different foods. In general, Food Law in Hungary does not provide the declaration of these components. Meat products contain many protein additives, including milk, soya and even gluten, without any information for the consumers.

Sometimes the consumer does not suspect the presence of the allergen (mostly gluten) component in the food or meal: e.g. in candy products, ice-cream, snacks, cheeses, powdered soups, margarine, puddings, ketchup, chewing gums, instant soft drinks etc. In some cases even the producer overlooks the problem, using aroma holders and wheat starch containing gluten traces.

Alfa-gliatest proved to be positive for IgG and IgA fractions in a high percentage of children believed to have a gluten-free diet.

The authors mean to solve these problems in two important ways: First, to enforce the GMP principle in special foods for dietetic purposes. Second, by a selective and sensitive analytical control in this kind of foods. There have been developed methods for the determination of gluten in foods using SDS-PAGE,

monoclonal sandwich and polyclonal indirect immunoassay. At the same time the allergen activity of these samples are measured by positive human serum.

Slovak food data bank and possibilities of its application. Kristína Holčíková,* Eva Šimonová, Eva Kováčiková, Alexandra Vojtaššáková & Ján Kut'ka.

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The Slovak Food Data Bank was created as an open-ended system which contains data on the most universal food characteristics and software for their processing and use.

DATABASES:

- physical properties of primary foods
- composition, nutritive and energy value of primary foods (*ca* 1000) food products (*ca* 1500) meals and dishes (*ca* 300)
- food consumption in SR and abroad
- recommended daily allowances for different categories of inhabitants (SR and other countries)
- nutritive and mass losses
- energy requirement of some working and sports activity

SOFTWARE:

- software for statistical processing of input data and calculation of control and valuating parameters
- ALIMENTA
 - calculation of composition and energy value of food products, meals and dishes considering mass and nutritive losses during technological or culinary preparation
 - comparison of diet composition with recommended daily allowances (evaluation of daily nutrients intake)
 - table program (allowing preparation of special food tables giving an optional choice of foods and their nutrients)
- program evaluating dependence of mass occurrence diseases on long-term catering habits
- software for nutritive evaluation of food consumption
- NUTREX, intended for physicians, evaluates daily and weekly intake of nutrients and is connected with medical records of patients

Each data base is an open system, which can be brought up to date, i.e. gradually built up and improved.

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