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European Food Composition Data for Better Diet, Nutrition and Food Quality

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European Food Composition Data for Better Diet, Nutrition and Food Quality

Session 2 - Major public health/nutrition education tools and software that utilize food composition databases

Chairs: Prof Judy Buttriss (BNF) and Dr Santosh Khokhar (UL)

• Dr Carolin Krems *Max Rubner-Institut, Germany*	Energy and nutrient intake of the German population using the German Nutrient Database
• Dr Christophe Matthys *International Life Sciences Institute, Belgium*	The Eurreca toolkit for aligning micronutrient recommendations
• Viktoria Scherrer *dato Denkwerkzeuge, Austria*	Use and generation of food composition data in nutritional software
• Emily Fitt *MRC Human Nutrition Research, UK*	Disaggregating composite food codes in the UK National Diet and Nutrition Survey food composition databank
• Prof Gregorio Varela-Moreiras *San Pablo CEU University/Spanish Nutrition Foundation, Spain*	Evaluation of food consumption and dietary patterns in Spain according to the Spanish Food Consumption Survey: updated information

Use and generation of food composition data in nutritional software

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Biography

Viktoria Scherrer has been working as an innovation assistant at *dato Denkwerkzeuge* since 2007. *dato Denkwerkzeuge* started to develop software in the late 1980s for recording dietary histories of patients for the Ludwig Boltzmann Institute of Metabolic Diseases and Nutrition, Hospital Lainz, Vienna. At that time *dato Denkwerkzeuge* was the first software company granted permission to integrate the German Nutrient Database (BLS) into its software programs. Since then *dato* has developed various projects in the scientific field, like EWP (Nutritional Scientific Program) or DISHES for the RKI Berlin. In 2007 *dato* planned and implemented the software and database for the documentation and composition of all data comprising the BLS. One of *dato*'s major projects last year was to develop a new software program for and in cooperation with the Department of Nutritional Sciences of the University of Vienna. Besides the scientific field, *dato* has also set up software programs for the food industry and various nutritional consultancies, as well as the catering sector. Viktoria is currently developing concepts for the different software modules, providing scientific background including appropriate data. She studied Nutrition at the Department of Nutritional Sciences of the University of Vienna.

Abstract

Food composition data are used in many different fields including food industry, the catering sector and nutritional consultancies. To meet the varied needs of its clients, *dato Denkwerkzeuge* has developed a wide range of nutritional software based on the German Food Code BLS[1].

Table 1: Use of food composition data in existing software

Nutritional Software	**Industrial**	**Consulting**	**Kitchen**	**Science**
Sector	Food industry	Nutritional consultancy	Kitchen operations, catering	Nutritional science
Main features	- Nutrient calculation - Declaration - Labelling	- Evaluation of dietary records - Meal planning	- Calculation of recipes - Meal planning	- Nutritional epidemiological studies - Generation of local databases
Main data	Nutrients according to Bundeslebensmittelschlüssel [1] Retention- and yield factors according to Bognár [2, 3, 4] and USDA [5]			

Generation of food composition data using software: Working with food composition data also means generating new data. Nutritional software can be used to calculate the nutrients in new recipes, new products or even identify new nutrients/ nutrient groups. In addition, missing values can be extra- and interpolated.

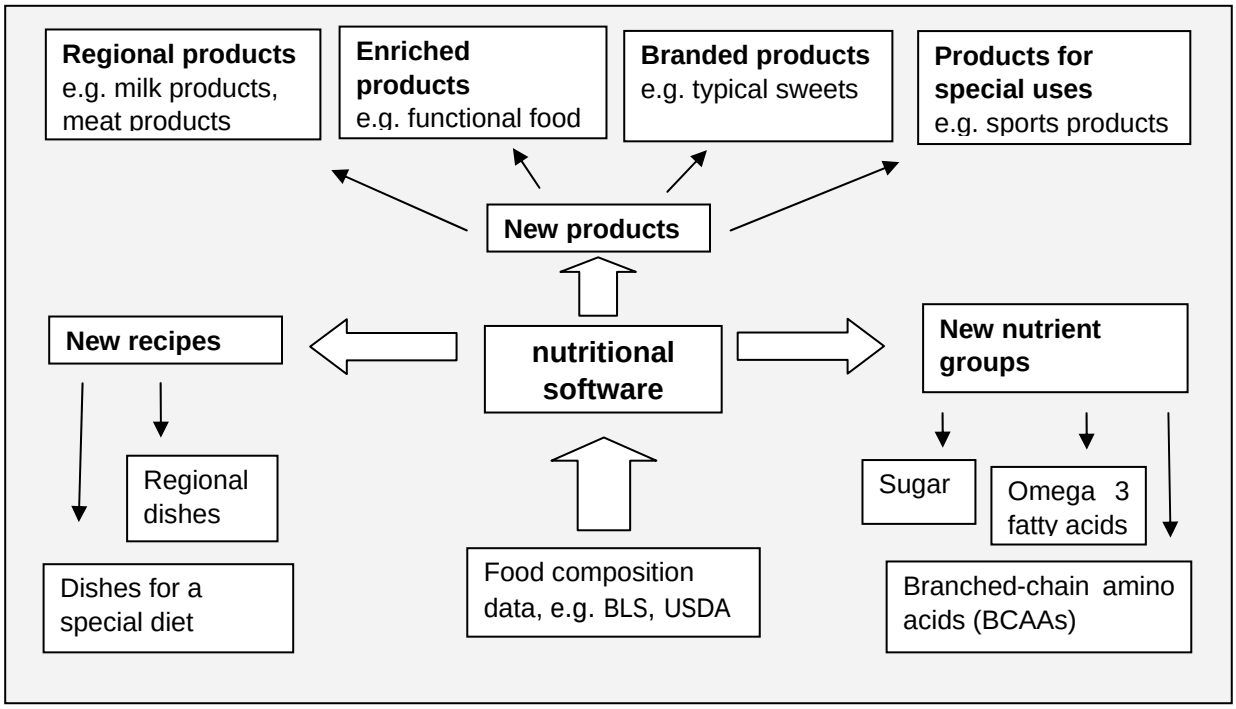

Fig.1: Generation of new food composition data

Trends in the use of food composition data: There is a trend towards huge interest in more detailed food composition data, and this trend can be observed in all of the different settings where food composition data are used. An increasing demand for information about nutritional values of food additives, allergens, substances that are associated with intolerances (e.g. histamine), or harmful substances (acrylamide) can be observed. Many also want to get more information about substances associated with health benefits, like secondary plant metabolites or further micronutrients that are not yet available, such as selenium.
In the field of consultancy there is also a big interest in nutrients of branded products.
The latest trend is to focus on pet nutrition, which creates a demand for data about pet-relevant nutrients like taurine.

Conclusion: Food composition data are of huge interest for nutrition related business branches. Using these data, businesses also generate lots of new data. Nutritional software is the key to make data useable for science. Persistent communication and cooperation between commercial users of software, science and software companies would be of benefit for all sides.

Table 2: Trends in use of food composition data

Trend	Field	Data of interest	Example
Safety	All fields	Harmful substances	Acrylamide
		Allergens	all
		Substances associated with intolerances	Histamine, fructose, lactose
		Food additives	all
Health	All fields	Secondary plant metabolites	Polyphenols, phytosterines
		Nutrients	Selenium
Sports	Industry/Consultation	Special substances/nutrients	BCAAs, carnitine
Personal Consultation	Consultation	Portion sizes	
		Branded products	Sports products, sweets
Pet nutrition	Industry/Consultation	Pet relevant nutrients	Taurine

References

[1] Max Rubner-Institut, Bundesforschungsanstalt für Ernährung und Lebensmittel (BfEL), BLS II.3.1, Karlsruhe

[2] Bognár A, Ausbeutefaktoren und Berechnungen für Gewicht beim Garen von Lebensmitteln und Speisen, unveröffentlichte Sammlung, Stuttgart, 2002

[3] Bognár A, Determination and definition of weight yield factors during preparation of food and dishes by cooking, unveröffentlichte Sammlung, Stuttgart, 2002

[4] Bognár A, Piekarski J, Guidelines for Recipe Information and Calculation on Nutrient Composition of Prepared Food (Dishes), Journal of Food Composition and Analysis (2000), 13, 391-410

[5] USDA Table of Nutrient Retention Factors, Release 5, Beltsville, 2003