

Editorial



Selected Bioactive Plant Compounds in Human Nutrition

The COST Action 926 *Impact of new technologies on the health benefits and safety of bioactive plant compounds* was funded by COST (European Cooperation in the Field of Scientific and Technical Research). It started in February 2004, ended in February 2008 and brought together scientists from the fields of nutrition, medicine, food toxicology, food technology and other related research areas from 18 different European countries, namely Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, Republic of Macedonia, France, Germany, Hungary, Italy, Lithuania, Norway, Poland, Romania, Spain, The Netherlands, and the United Kingdom.

The aim of this COST action was to get an overview on the state of the art of research on the various bioactive plant food compounds in our daily diet and their effects on health and disease prevention. As the area of interest in this action was quite broad, the action's work was separated into four different fields.

One field covered the effects of bioactive components on molecular tools, biological models and gene regulation and expression. The results were summarized in various reviews and published in *Food and Chemical Toxicology* (2008).

A second field of interest concerned the gene expression, disease initiation and progression, and a third the effects of bioactive components from fruits and vegetables on gene

expression. The respective reviews are published in the *British Journal of Nutrition* (2008).

If bioactive plant food compounds show beneficial effects in experimental models such as animal models, *in vitro* studies or even in human intervention trials, the question of the bioavailability of these compounds from food sources arises. Therefore, another field of interest comprised the bioavailability, the biological and physiological significance and the analysis of those bioactive food compounds. Moreover, good sources of these compounds in the daily diet were sought and the effects of processing to improve or reduce their bioavailability examined. The results are presented in the following papers of this special issue. Due to the great number of papers on flavonoids and phenolic acids, the effects of processing and storage on the content of these compounds in food and their bioavailability were each dealt with separately. Attached to the review on processing and storage on the flavonoid- and phenolic acid contents, the reader will find a link to the home page of MNF where there is an Excel table with all the information in the cited literature for the time period selected (2002 – June 2006) and thus offers the opportunity to search for various criteria.

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To disseminate the results to the general public, interested consumers, food industry, various stakeholders and policy makers, two further papers have been published; one from a technological perspective (*Trends in Food Science and Technology*, 2008) and the other from the consumer perspective (*Nutrition Bulletin*, 2008).

We are very grateful to the Editor-in-Chief, Professor Peter Schreier, for providing the COST Action 926 with the opportunity to publish all these reviews on the bioavailability of carotenoids, flavonoids and phenolic acids, glucosinolates, isoflavones, tannins and phytate in this special issue of *Molecular Nutrition & Food Research*.

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'Bioavailability – absorption, distribution, metabolism and excretion of bioactive substances in foods'