

## Conference Report

# 2010 EFFoST Annual Meeting, Dublin

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The 2010 Annual Meeting of the European Federation of Food Science and Technology (EFFoST) took place in Dublin, Ireland on 10–12 November. Twenty four papers and 275 posters were presented, and there were 290 attendees. The theme of the Conference was ‘*Food and Health*. There were five oral sessions: (i) Nutrition and Health; (ii) Functional Foods [a]; (iii) Functional Foods [b]; (iv) Processing for Healthy Foods, and (v) Food Safety and Health. The poster sessions corresponded to these themes.

### Nutrition and health

The opening paper indicated that personalised nutrition is related to details of an individual’s genetic code and successful approaches must go along this route. Currently, personalised nutrition operates at the level of the individual. However, the possibility exists that dietary advice could be tailored to clusters of individuals who share a common metabolic profile or metabotype. New developments in sports nutrition (the topic of another presentation) also recognise the need for individualisation of dietary advice and for identifying biomarkers for assessment of nutrient status. The third paper indicated that while dietary fats are implicated in the development of some modern diseases, they are also essential in the structure and function of the human body, and should be considered in the context of energy intake and fat composition. The fourth paper (nutrition and health claims) indicated that of the 1000 health claims assessed by the European Food Safety Authority (EFSA) the majority were deemed as not scientifically substantiated and were failed. Opinions varied among attendees re the health claims issue with some saying that current EFSA procedures are needed to protect the consumer from spurious claims, while others felt that the criteria were too strict and militated against innovation by the food industry and especially by SMEs who don’t have the resources to conduct efficacy testing.

### Functional foods (a & b)

These two sessions embraced 10 presentations. Seven of these dealt with pro or prebiotics. The need for validating biomarkers for health and disease was stressed, as was designing functional assays with predictive value and the identification of bioactive molecules in probiotic products while warranting safety for consumers. The importance of probiotics for the elderly was highlighted in the face of reduced gut function due, in part, to changes in gut microflora. However, it is important to note that the elderly do not constitute a homogeneous group. The importance of the gut microbiome for fuelling innovations in functional foods and the role of probiotics in immunomodulation were the topics of two presentations. The latter pointed to probiotics as a therapy to reduce the risk of obesity, and type-2 diabetes via their impact on inflammatory pathways. Two follow-on presentations were on the use of a probiotic lozenge for counteracting dental plaque, as a viable alternative to brushing and flossing, and on the development of novel fresh-cut fruit slices (mostly apple) containing probiotics, prebiotics or both (synbiotic); these fruit products have particular application to consumers allergic to dairy products and who, therefore, cannot eat probiotic yogurts. The use of enzymes from *Bifidobacterium bifidum* NCIMB 41171 to produce a unique second generation prebiotic (galacto-oligosaccharide) was highlighted by another speaker. The specific prebiotic mixture, Bimuno(r), has multiple biological health activities in the colonic environment beyond the stimulation of bifidobacteria and lactobacilli. Three further papers dealt with milk peptides, bioencapsulation and the absorption of polyphenols respectively. Overall, the evidence for the health benefits of milk peptides is strong as indicated by the market presence of functional foods containing them. Key challenges include designing technologies to ensure adequate yields of peptides, maintaining bioactivity during processing, and ensuring bioavailability in food matrices. Shell/matrix materials are key in the encapsulation of functional ingredients and a range of new encapsulating technologies were presented as were case studies on encapsulating the probiotic *Lactobacillus acidophilus* and the nutraceutical enzyme Nattokinase. The absorption of polyphenols by humans is a complex process. The exact nature of the flavonoid conjugates in blood is only known for a limited number of compounds. Flavonoids are excreted either in the urine or through the bile, but the half life varies considerably

between 2 and 20 h depending on the flavonoid. The understanding of these processes has helped to improve the design of *in-vitro* experiments on cultured cells.

### Processing for healthy foods

There were five presentations. The first dealt with processed-induced quality improvement, i.e. ‘reverse engineering’ which relates to the creation of tailor made foods and the PAN concept. This encompasses all consumer preferences, acceptance and nutritional needs, and a re-design of the way foods are currently produced. Personalised nutrition and its processing implications was the second topic. This embraces a Property-Structure-Process scheme as a consistent basis for process and tailored product design and can contribute to enable processing of nano-structured carrier and release systems for functional compounds. Presentation three was on healthier foods made by traditional processing methods and on how the processes can be modified to manufacture healthy food with minimum impact on quality. The penultimate presentation gave examples of the ability of non-thermal technologies for preserving the bioactive properties of plant foods; limitations of each technology were also cited. The final presentation covered the effects of extrusion on bioactive compounds with special emphasis on the effect on starch gelatinization, i.e. the extrusion process can be manipulated to make starch in foods more available for degradation in the gut.

### Food safety and health

The final session had four presentations. Patterns and prevalence of food allergies across Europe were highlighted in the first presentation with special emphasis on the EuroPrevall project. EuroPrevall methodology delivered, for the first time, an assessment of the burden that food allergy places on allergy sufferers and their communities.

Collaborations in Europe, North America, Africa, India and the Far East are giving new insight into how environmental and lifestyle factors affect patterns of allergy. Safety aspects of food nanotechnology were the second topic. Currently used methods need to consider the specific characteristics of nanomaterials and a case-by-case assessment using a tiered approach is recommended. EFSA opinion on risks posed by nanotechnologies was also discussed. News from food virology was the title of the third topic. Examples of foodborne viral infections, current knowledge on effective approaches to reduce/prevent viral contamination of foods, and some background information and proposals for Codex guidelines were featured. The final presentation reviewed specific limits for mycotoxins in food and feed, current control measures, safety systems, and the annual cost of food and feed contamination by mycotoxins in developing countries.

### Poster presentations

The posters represented a huge input to the success of the conference and complemented the oral presentations. The posters covered a wide range of topics and can be grouped broadly under the headings: food safety (83), process technology/optimisation (45), antioxidants and bioactives (34), food science (32), functional food products (22), consumers and consumer choice (16), nutrient content/fortification (15), health and nutrition education (15), pro- and prebiotics (7), and microstructure (6).

The conference afforded ample time and opportunity for networking and there was active discussion after each oral presentation and at the poster assembly sessions. Keep in touch with EFFoST and details of the 2011 conference (Berlin, 8–11 November 2011) via the website at [www.fffostconference.com](http://www.fffostconference.com).