June 20, 2011 (Monday) Pre-Congress Seminars

Ministry of Rural Development **Kossuth Lajos tér 11. Budapest V.**
CONFERENCE ROOM **Monday 10:00 – 18:00**

1.4. NEW QUALITY AND SAFETY REGULATIONS AND DEVELOPMENTS ON THE AGRIFOOD AREA

Seminar Chair: Zoltán Kálmán, Ministry of Rural Development, Hungary

16.40 Quality and Innovation Through Sensory Excellence
***Eija Piispa**, Bunge Europe Innovation Centre, Budapest, Hungary*

Piispa, Eija (Hungary)

In 1993 she earned Master of Science degree in Food Chemistry at the University of Helsinki, Finland. In years 2004 – 2006 she completed additional studies in General Toxicology at the University of Kuopio, Finland. During studies she worked as IAESTE (International Association for the Exchange of Students for Technical Experience) trainee in Hungary at the University of Horticulture and Food Industry, Institution of Preservation and Livestock Products Technology, Budapest. At first Eija worked as Researcher at the University of Helsinki, Department of Applied Chemistry and Microbiology, Finland dealing with lipid oxidation and analytics using chromatographic techniques; later she became margarine product development manager at Bunge Finland Oy and Raisio Group, Finland taking responsibility of R&D work in margarine industry. Today she works at Bunge Katalin Kovari Innovation Centre, Budapest as Margarine Innovation & Nutrition Delivery Leader. Her areas of expertise: Product development and research of foods, especially oils, fats & margarine industry; food legislation and patent issues; food analytics and quality control in food industry; oils & fats nutrition.

Quality and Innovation Through Sensory Excellence

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Consumers make food choices based on many aspects and the basis for choices is changing all the time. Food producers need to reply to these needs. We are facing new demands like sustainability that has not played as big role in the past as nowadays. Determinants of food choices are biological (hunger, appetite), economical (cost, income, availability), physical (access, availability, cooking skills), social (culture, family, eating habits) or related to attitudes and knowledge (nutrition, beliefs) (Revue EUFIC 04/2005). Taste is one of the major motivations for consumers in food buying process, but sensory quality is much more than just taste of the product. It includes other aspects like packaging, texture and sounds when eating the product. Based on previous experience and learning we expect certain characteristics for products; crisps need to make sound when biting, ice-cream needs to melt nicely in mouth and stringiness in meat is generally negative characteristics, but bubble gum we like to chew.

Sensory evaluation provides methods to study product characteristics and make decision for product and technology development. Depending on the target and use of the results, sensory evaluation is done by trained expert panels, focus groups or by consumers. Selection of proper method and panel guarantees good basis for decision making.

Expert panel training includes testing of senses, product specific training and instructions on sensory methods. Testing of senses allows selecting panelists that have ability to differentiate characteristics of products. Important part of training is to get information about the special sensitivities or weaknesses of the panelists. Product specific training includes learning of attributes of products: off- and afterflavours than can result for example form raw materials or ingredients, storage conditions or occur in the product during shelf life. It is important to train panelists using wide variety of products from the market. Expert panel needs to agree on the terms and vocabulary of product category and agree on how to use evaluation scale. This can be done with reference materials and comparison samples. Also knowledge of sensory methods used for product testing is teached to expert panelists.

Expert panel can do discrimination- and descriptive tests. Panel works as an analytical tool to check differences or similarities of samples or products (discrimination tests such as pair test, triangle test, A/notA-test) and produce descriptions of the sensory characteristics of products that enable comparison between products. Expert panel evaluations are used in every steps of product development, monitoring competitor's products and in everyday quality control of food production. These test results' target is not to give data on preference, liking

or not-liking, but to give analytical result of taste, structure, odour, outlook and mouthfeel. This result can then be compared to chemical and/or rheological analysis results of the product.

Consumer tests analyse the appreciation of the consumers towards the appearance of the product in terms of packaging, design and sensory properties. Consumer tests are organized as blind tests or branded tests. In blind tests, where product is tasted without any information of its brand, producer, packaging outlook etc. product's acceptance is tested only on a sensory basis. This test can be used to select the best product or recipe and it gives guidance to innovation and product development for new products or changes of current products. In branded tests consumers see the packaging and/or concept. Brand knowledge, image and previous positive or negative experience affects the results.

Consumer tests can be qualitative or quantitative. In qualitative tests target is to identify most important quality attributes and in quantitative tests overall preference and acceptance is scored. Organising consumer tests is costly and time consuming. One possibility is to use focus group tests to get detailed description of products. One focus group consists of app. 10 consumers who have been trained to sensory evaluation techniques. They should fit to general consumer characteristics and they can affectively identify attributes that are most important and that should be included and maximized in the product. Focus group is also important to identify undesirable characteristics of products and based on these results it's easier to design successful consumer test (Moskowitz, 2006).

Preference mapping combines expert panel and consumer test results. Analysis is based on specific regression models between data of these tests. Results show which product characteristics obtained by expert panel profiling are positive and which negative, and thus product development can be targeted to meet better consumer's needs.

Sensory science allows us to characterize products and guarantee quality in production. Expert panels work as an analytical tool to give exact data on products and consumer tests and preference mapping helps us to understand which characteristics are driving the preference. This data is extremely important in product development and innovation but also for brand and its design; finally it's for the benefit of consumers.

References:

Moskowitz, H.R., Beckley, J.H. and Resurreccion, A.V.A. Sensory and consumer Research in Food Product Design and Development. Blackwell Publishing.

Revue EUFIC 04/2005: The determinants of Food Choice