

Special Report

The 2nd International Conference on East-West Perspectives on Functional Foods: Science, Innovations and Claims

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The 2nd International Conference on East-West Perspective on Functional Foods held in Kuala Lumpur, Malaysia, on November, 2007, discussed the current work on some traditional Asian foods and new technologies that offer both challenges and opportunities for functional foods. The highlight of the conference was on the current regulatory status of nutrition and health claims related to functional foods and the experiences in some countries on the substantiation of claims. Attention was also given to strategies for effective communication of functional foods to consumers. The conference concluded with recommendations to strengthen R&D efforts and harmonization of protocols and methodologies on functional foods within the region.

Key Words: functional foods, nutrition and health claims

SUMMARY

The 2nd International Conference on East-West Perspectives on Functional Foods: Science, Innovations and Claims

Following the First International Conference on East-West Perspectives on Functional Foods held in Singapore in 1995, the 2nd International Conference with the theme, Science, Innovations and Claims, was held in Kuala Lumpur, Malaysia, from November 5th to 7th, 2007. As in the first conference, more than 200 participants came from all over Asia, as well as United States and Europe.

At the Opening Session, **Dr. Richard Head**, Director of CSIRO Preventive Health National Research Flagship, Australia, traced the evolution of functional foods. He discussed the current factors driving their development including the increasing understanding of the relationship between food and health, the growing awareness of consumers, and the global "epidemics" of obesity, diabetes and neurodegenerative disorders. However, issues such as scientific substantiation of their beneficial effects and their regulatory requirements have to be resolved to clear their path to the market. **Dr E Siong Tee**, Scientific Director of ILSI Southeast Asia Region (ILSI SEAR), described the efforts of the Region towards harmonization and common understanding of functional foods to help promote their development. He summarized the outputs and recommendations arising from the series of workshops, seminars and expert consultation organized by ILSI SEAR over the last four years. These meetings resulted in the publication of ILSI SEA Monograph on Functional Foods, Guidelines for Scientific Substantiation of Nutrition and Health Claims, and the Proposed Regulatory Framework for Nutrition Labeling and Claims.

The first section of the Conference dealt with some traditional Asian foods and their health outcomes. Prof.

So-Ha Chan of the National University of Singapore described their current work on *Lyceum barbarium* (Chinese Wolfberry), particularly on its immune function. They found that the activation of T lymphocytes by particular fractions of *Lyceum barbarium* fruit may contribute to its immune-enhancement function. **Dr. Zhang Ying** of Zhejiang University, China, summarized the experimental data arising from their scientific studies on the beneficial effects of bamboo-leaf extracts (BLE) from *Phyllostachys nigra var. henonis*, particularly on the cardiovascular system. He described their animal tests, clinical trial and pharmacologic studies which showed beneficial effects on blood lipids and aortic ring endothelium. **Dr. Jim Yung Kim** of Inje University in Korea discussed the many components of soy beans including pinitol and Touchi extract that have shown beneficial effects on type 2 diabetes. Soy oligosaccharides acting as prebiotic, soy isoflavone for promoting bone health, and soy lecithin helping to lower serum cholesterol, have been approved either as FOSHU in Japan or Health/Functional Food (HFF) in Korea. **Dr. Hélène Alexiou** of Orafit, Belgium, discussed the role of prebiotics on immunity and gut health, with particular reference to inulin-type fructans, galactooligosaccharides (GOS) and lactulose. Prebiotics have been shown to impact on the balance of the gut microflora towards a healthy composition. They have the potential of improving the barrier function of the intestine as well as in modulating the postnatal development of the

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immune system. Oligofructose have also been shown to decrease the duration or severity of diarrhea in infants. The last paper in the session was given by **Dr. Tony Bird** of CSIRO, who discussed the health benefits of grains and carbohydrates. He observed that the evidence of total fiber intake reducing risk of chronic disease is much weaker than that for whole grain foods. Soluble non-starch polysaccharides (NSP) and Resistant Starch (RS) reaching the colon are probably more important than the amount of total fiber for maintaining large bowel health.

The second session of the Conference dealt with new technologies that offer both opportunities and challenges for functional foods. **Ms. Magdalene Wong** of DSM Nutritional Products discussed the challenges presented by the addition of functional ingredients to foods. She cited the use of formulation technology (Actilease™) that enables the solubilization of fat-soluble ingredients such as carotenoids, thus guaranteeing bioavailability. A functional ingredient from green tea (ECGC) that has been shown to have antioxidant and cardiovascular benefits, have been used successfully as a functional ingredient in many foods. The advent of new technology has enabled the inclusion of probiotics in dry goods such as confectionary and dry milk powder. **Dr. Keiichi Abe** of Suntory Ltd, Japan, summarized their experience in the development of KURO oolong tea, from identification of active compound to *in vitro*, *in vivo* and clinical studies that demonstrated its effectiveness in lowering postprandial triglycerides and decreasing abdominal lipid and LDL-cholesterol.

The third session of the conference reviewed the current regulatory status of nutrition and health claims related to functional foods. **Mr. Jean Savigny** of Keller and Heckman LLP, Belgium, discussed Regulation (EC) No. 1924/2006 which harmonizes the set of rules on nutrition and health claims in the European Union. Dr. Savigny first described the four categories of claims: nutrition claim, functional health claim, reduction of disease risk claim, and claim related to children development and health, and ended with the current issues and challenges on the implementation of the Regulation. An overview of nutrition and health claims in China was given by **Prof. He Mei** of the Chinese Center for Disease Control and Prevention, China. Prof. He summarized the conditions related to nutrition claims, nutrient content claim, and nutrient comparative claim in Mainland China, Hong Kong and Taiwan. **Dr. Bob Boyd** from the Food Standards Australia and New Zealand, discussed the current joint food code for both countries established in 2002 by Food Standards Australia and New Zealand (FSANZ). While there are no specific regulations on function claims, most health claims are currently prohibited. Only high level health claims require preapproval by FSANZ based on substantiating evidence, but evidence to substantiate general level health claims will need to be provided by the supplier on demand. Finally Dr. Boyd discussed the concept of nutrition profiling of whole foods using scoring criteria developed by UKFSA. The last paper in the session was given by **Dr. Dedi Fardiaz** of the National Agency for Drug and Food Control (NADFC), Indonesia, who discussed the efforts in Indonesia towards functional food regulation. The 2005 regulation from NADFC was

issued mainly for the purpose of food product registration and describes the pre-market approval scheme for functional foods. The regulation is subject to review based on new scientific evidence and new developments in food labeling and health claims.

The fourth session of the Conference dealt with the experience in various countries relating to the substantiation of claims. The Japanese experience and case examples from FOSHU (Food for Specified Health Uses) was discussed by **Dr. Keizon Umegaki** from the National Institute of Health and Nutrition, Japan. Since the establishment of FOSHU in 1991, several changes have been introduced including nutritional supplements containing vitamins and minerals, Standardized FOSHU, Reduction of Disease Risk FOSHU, and Qualified FOSHU. Efforts are now being made through the internet and training of health professionals to promote the proper use of the FOSHU system. The experiences in substantiating high level and general health claims in Australia were discussed by **Prof. Linda Tapsell** of the University of Wollongong, Australia. In Australia and New Zealand, high level health claims referring to a biomarker or serious disease have to be approved by FSANZ based on scientific evidence considering the level of evidence or authoritative reviews. Prof. Tapsell suggested that the level of proof required should vary depending on the consequences of the target dietary behavior. **Dr. Joanne Lupton** of Texas A&M, USA, summarized the US approach to scientific substantiation of functional foods. While there is actually no specific regulatory policy of the US-FDA on functional foods, they are regulated using the same policy as conventional foods. Claims related to labeling of functional foods include dietary guidance, structure/function claims, nutrient claims, and health claims. Dr. Lupton summarized the FDA's evidence-based review system, giving examples of serious and potentially serious study flaws. The EU experience in evaluating scientific evidence for claims was discussed by **Mr. John Howlett**, Food Regulatory and Scientific Affairs, UK. With the recent adoption of Regulation (EC) No. 1924/2006, the EU Member States now follow common procedures in the evaluation of claims on food functionality. For health claims relating to disease-risk reduction or to children's development and health, the EFSA has the primary responsibility for evaluating the scientific evidence and its impact on nutrition and health. The EFSA has set guidance on the type and quality of the scientific evidence needed to substantiate such claims. **Ms. Pauline Chan** from ILSI SEAR described the efforts in Southeast Asia in setting guidelines on substantiation of claims related to functional foods. Over the last 4 years, ILSI SEAR has organized several workshops and expert consultation towards this end. These meetings resulted in guidelines on the types of studies required for the substantiation of claims, the use of biomarkers, research design and methodology, and overall evaluation of submitted data; guidelines for evaluation of safety of functional foods; and proposed regulatory framework for harmonization of nutrition labeling and claims. Ms. Chan encouraged regulatory agencies in the region to use these guidelines as references when developing national framework for nutrition and health claims. **Dr. Takeshi Kimura** of

the International Council on Amino Acid Science (ICAAS) discussed the safety evaluation and scientific evidence for claims for amino acids and selected foods with health benefits. While the issue of toxicity as a result of low purity has been raised, no credible evidence on adverse health effects for most amino acids present in the diet has been demonstrated even at the highest intake used. For health foods other than FOSHU, the Ministry of Health, Labour and Welfare in Japan has just launched a panel for ensuring the safety of such foods.

The final session of the Conference dealt with strategies for effective communication of functional foods to consumers. **Dr. John Foreyt**, Baylor College of Medicine, USA, discussed effective communication strategies to help consumers in making healthful food choices and developing healthy lifestyles. Using the prevention and control of obesity as an illustration, he proposed strategies to ensure long term success. At the same time, the food industry, government agencies and food marketers can be powerful agents for consumers trying to achieve a healthy lifestyle. **Dr. Philip Mohr** of CSIRO, Australia, discussed important issues in understanding today's consumer relative to functional foods. He enumerated some considerations for effective message development particularly to promote acceptance of technological innovations. **Ms. Wendy Reinhardt Kapsak** of the International Food Information Center (IFIC), USA, summarized the findings from the IFIC Foundation 2007 survey on consumers' understanding on functional foods. A large percentage of American consumers believe in the health benefits offered by certain foods and beverages. The larger 2007 IFIC survey on consumer attitude toward functional foods/foods for health highlighted the American's familiarity with foods that provide health benefits beyond basic nutrition. The survey also pointed to the top food and nutrition information sources, including media, health professionals, and food labels. On the other hand, **Ms. Helen Yu** of the Asian Food Information Center (AFIC) based in Thailand, highlighted some key differences and similarities between consumers in East and West regarding attitudes, behavior and knowledge towards functional foods. Ms. Yu summarized the results of AFIC 2006 research on consumer perception about functional foods, pointing to the role of food packaging, advertising, TV programs and school education in shaping the respondents' information and knowledge of nutrition. **Dr. Lackana Leelayouthayotin** of Cerebos, Thailand, illustrated the optimal use of consumer insights and scientific findings to build a strong communication and marketing strategy with the development of a product containing calcium, vitamin D, soy germ, and essence of chicken for the prevention of osteoporosis. Building on consumer insight about bone health, Cerebos developed a product to meet consumer needs through proper calcium+soy positioning, followed by a methodical communication strategy. **Dr. Richard Walton** of Meiji Dairies Corp., Japan, illustrated how functional foods – whether FOSHU or non-FOSHU products - could be introduced successfully to consumers in Japan. He cited three products, Bulgaria Yogurt, Meiji Pro-bio Yogurt LG 21, and VAAM sports drink, the last two being non-FOSHU. Dr. Walton concluded that while the FOSHU system is useful, other

methods for informing the public are necessary for products for which there are no FOSHU claim categories. For the last presentation of the session, **Ms. Leong Ming Chee** of Nestlé, Malaysia, showcased how Nestlé uses consumer insights to develop communication on functional foods while ensuring compliance with local regulatory requirements. After summarizing Nestlé's communication principles, Ms. Leong illustrated the application of these principles in the promotion of Nesvita and Nestlé Omega Plus with Acticol. She concluded that communication strategy to be effective should include emotional elements, be realistic and relevant to consumers, and provide accurate information without overt claims.

Dr. E-Siong Tee gave the concluding presentation of the Conference. After tracing the many activities regarding functional foods in Asia and elsewhere since the 1st International Conference on East-West Perspectives on Functional Foods in 1995, Dr. Tee maintained that it is possible to continue harmonization of concepts and definitions in the region in order to further promote the development of functional foods. For example, harmonizing of protocols and methodologies would facilitate advancement in the development of functional foods. Dr. Tee recommended intensifying R & D efforts particularly by the food industry, capacity building, and regulatory development; enhanced interaction and networking among countries in Asia; and collaboration among government, industry and academe. He emphasized the need for ethical and effective communication to consumers. Finally, Dr. Tee recommended that ILSI SEAR continue its leadership in facilitating the development of functional foods in the region.

AUTHOR DISCLOSURES

Rodolfo F Florentino, no conflicts of interest.

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第二屆國際大會討論功能性食品的東西方觀點：科學、創新及宣稱

在 2007 年 11 月於馬來西亞吉隆坡所舉行的功能性食品的東西方觀點之第二屆國際會議，討論一些對傳統亞洲食物的現行研究及新的技術，對功能性食品提供了挑戰以及機會。會議的重點是現行有關功能性食品營養及健康宣稱的管理狀況，以及交換一些國家將這些宣稱實證化上的經驗。並且也將一些重點放在如何有效傳達功能性食品給消費者的策略上。大會結論是建議應加強功能性食品的研究與發展以及整合在區域內功能性食品的規範與方法。

關鍵字：功能性食品、營養與健康宣稱