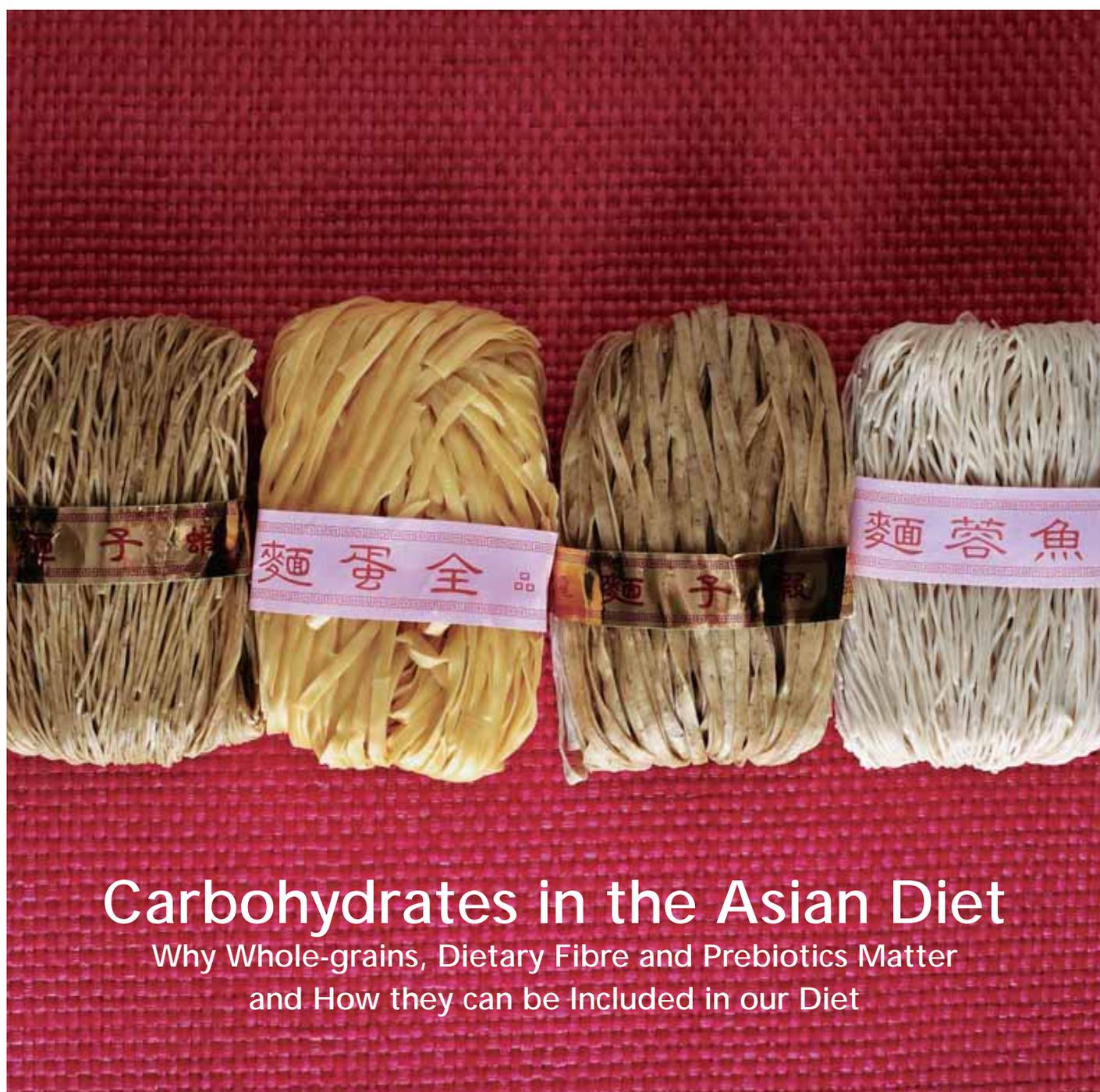


ScienceInSight

News and Updates on Nutrition, Food Safety and Health



SPECIAL REPORT ILSI unveils a bold new logo XITH ASIAN CONGRESS OF NUTRITION FOOD SAFETY Risk-based Approach to Managing Contaminants in Food INFANT AND YOUNG CHILD NUTRITION Updates from Southeast Asia

From the Executive Director



ILSI Unveils a New Symbol for the Organization's Global Dynamism

As we welcome our readers to this 2nd issue of **ScienceInSight**, you may notice that ILSI has unveiled a fresh visual identity with a new logo that no longer features the familiar globe and microscope that has accompanied the organization for the past three decades. In its place is a bold and contemporary symbol that continues to represent the dynamism and global core of ILSI. The new visual identity was adopted early this year after extended deliberation and much consultation within the organization's international family. How the new logo was created and what it represents for ILSI are shared in this issue's Special Report.

The year thus far has witnessed a busy and diverse calendar of scientific events for ILSI SEA Region and our partners. 2011 kicked-off with the 9th Workshop of the ASEAN Food Safety Standards Harmonization Working Group in January; the accomplishments of the Working Group and Workshop series over the past decade were officially recognized by ASEAN in its acceptance and adoption of the regional food safety standards database on food additives developed and maintained by ILSI SEA Region. The harmonization effort will be continued under the official ASEAN Consultative Committee on Standards and Quality. In April, a series of seminars addressing various aspects of carbohydrate science was organized in conjunction with our Annual Meeting. A second expert consultation meeting on infant and young child nutrition was also held to discuss the findings of a regional survey commissioned by ILSI SEA Region on maternal feeding practices, to identify gaps on related nutrition indicators and to discuss nutrition and dietary assessment for infants and young children. Other events highlighted in this issue include the seminar on ASEAN GMO analysis, food allergen exposure and management in Australia, as well as food security in Asia. In July, ILSI and ILSI SEA Region participated actively in the XIth Asian Congress of Nutrition held in Singapore. We sponsored and facilitated a very well-received session on Functional Foods, and awarded prizes to the top three selected posters and one oral presenter from among more than 300 papers presented at the Congress. The new ILSI logo was unveiled at the award ceremony at the close of the ACN, a timely and fitting introduction at an international event that was attended by close to 1,000 participants from across the globe.

Do also check out the News & Updates section in this issue, where we share our calendar of upcoming activities in the region. We look forward to the active participation and support from our stakeholders, network and partners in these regional programs.

Boon Yee Yeong
Executive Director
ILSI Southeast
Asia Region

In This Issue...

Features

- 1 **All About Carbs**
Why Whole-grains, Dietary Fibre and Prebiotics Matter, and How to Include Them in the Asian Diet



- 7 **ILSI SEA Region Annual Meeting**
8 **XIth Asian Congress of Nutrition**

Special Report

- 10 **A Bold New Logo for ILSI**



Reports From The Region

- 11 **Infant and Young Child Nutrition in Southeast Asia**
14 **A Risk-based Approach to Management of Contaminants in Food**
15 **9th ASEAN Food Safety Standards Harmonization Workshop**
17 **GMO Analysis – the Why, What and How**
18 **Food Security in Asia – Harmonization of Food Standards and Analytical Methods**
19 **Allergen Exposure Management – The Australian Perspective**



News & Updates

- 21 **Publications**
Recent Publications by ILSI SEA Region

Upcoming Activities
Activities from August – December 2011, and in 2012

All About Carbs

Why Wholegrains, Dietary Fibre and Prebiotics Matter, and How to Include them in the Asian Diet

The complexity of carbohydrates and their roles in maintaining health and influencing diseases are hot topics being addressed across scientific communities and health authorities globally. With the advancement of agriculture and food sciences, changing society trends and dietary patterns, issues gaining most interest are the types and amount of carbohydrates consumed, as well as their quality and desired distribution in relation to other macronutrients in our diet.

In recent years, the importance of consuming better quality carbohydrates has been highlighted by health authorities in Southeast Asia through updates in the regional countries' national dietary guidelines and efforts to promote whole-grains consumption. While Codex Alimentarius (Codex) has recently provided guidance on dietary fibre, recommendation on whole-grains has been less defined. In this context, ILSI SEA Region, together with its collaborators, organized a series of meetings in the region on carbohydrates, whole-grains and dietary fibres in April 2011. The three meetings were held in Singapore, Malaysia and Thailand. The regional meeting in Singapore addressed carbohydrate science and efforts in promoting carbohydrate quality using whole-grains as an example, while the meetings in Malaysia and Thailand were organized by the respective country committees to focus on country-specific issues i.e. whole-grains in Malaysia, and dietary fibre and prebiotics in Thailand.



In Singapore, the symposium titled **Carbohydrates and Whole-grains: Quality, Quantity and Health Benefits** was held on April 20, 2011 in conjunction with ILSI SEA Region's 2011 Annual Meeting. The symposium was organized in collaboration with the Singapore Health Promotion Board, and was attended by over 140 participants from academic, research and health institutions, food industries and government agencies. Following the Singapore meeting, a seminar titled **Whole-grains in Human Nutrition – A Scientific Update** was held in Kuala Lumpur, Malaysia on April 22, 2011. Co-organized with the Nutrition Society of Malaysia, the seminar was attended by 100 participants.

Both meetings successfully achieved their aims to: 1) update on current understanding of carbohydrates science and the physiological effects on human health; 2) review consumption patterns and scientific rationale of current dietary recommendations for carbohydrate grains; 3) share experiences in promoting supply and consumption of quality carbohydrates such as whole-grains, and 4) provide a forum for discussion among all stakeholders in promoting higher consumption of whole-grains, including consumer education, industry innovations, and regulatory considerations.

The third meeting held in Bangkok, Thailand from April 25 – 26, 2011, included a seminar and roundtable discussions focusing on **Dietary Fibre and Prebiotics – Science and Regulatory Update**. Attended by over 120 participants, the seminar was organized in collaboration with the Food Industry Club – The Federation of Thai Industries, as well as the Food Science and Technology Association of Thailand.

An Update on the Latest Carbohydrates Science



Dr. Julie Jones, St Catherine University, USA

Health Benefits of Whole-grains

For her presentation in Singapore, guest expert and speaker Dr. Julie Jones, St Catherine University, USA, provided an **overview of carbohydrates science, including quality, quantity and physiological effects on human health**. She shared that the optimal quantity of carbohydrates in the diet has been debated for years, but carbohydrate quality attributes such as the amount of dietary fibre, whole-grains and glycemic response have recently been discussed. Establishing uniform definitions of dietary fibre and whole-grain foods as well as identifying culturally appropriate foods for inclusion in the diet are important public health strategies to address consumption gaps for these foods. Dr. Jones also presented the health benefits of overall carbohydrates and of specific carbohydrate foods such as high-fibre foods and whole-grains in relation to their potential for reducing risk of obesity and various chronic

diseases including cardiovascular disease, diabetes, colorectal cancer and other types of cancer.

Dr. Jones highlighted the controversies related to modification of carbohydrates through characterization of the glycemic response using glycemic index (GI) and glycemic load (GL). The GL / GI measurement has great variability coupled with inconsistency in study outcomes on disease risk reduction. The inconsistency can be due to: 1) the fact that low GI or GL diets can be constructed with an array of high-fibre grains, fruits and vegetables, or by using high-fat, low-carbohydrate foods, 2) the high standard deviations in the measures, and 3) changes in GI with processing, food temperature, the subject condition, etc. Better measurement is needed to assess carbohydrate quality.

In Malaysia, Dr. Jones' keynote address focused primarily on whole-grains, covering the **definition of whole-grains and main food sources, global aspects of whole-grains consumption and its importance to human health**. Some issues still remain with regards to the definition of whole-grains, including the correct proportion of bran, germ and endosperm for each grain, whether recombining is done at the mill or bowl, percentage of whole-grains, etc. In terms of whole-grains consumption, dietary guidance and its importance to human health, numerous studies in different parts of the world have shown that whole-grains consumption is beneficial in lowering the risk of various chronic diseases.

These include overweight and obesity, hypertension, cardiovascular disease, diabetes and metabolic syndrome, some cancers, and even total mortality. A good amount of evidences have been accumulated to indicate that more whole-grains intake is associated with lower body weight, lower total and LDL-cholesterol, lower blood pressure, improved glucose control and lowered insulin resistance, as well as decreased risk to colon and rectal cancers. Most of the available evidences are from large scale observational studies.

Health Benefits and Definition of Dietary Fibre and Prebiotics

At the Bangkok seminar focusing on dietary fibre and prebiotics, Dr. Jones' presentation provided a **scientific overview on dietary fibre and issues related to the definition, health benefits, and regulatory perspective**. Codex definition of dietary fibre adopted in 2009 left some issues to be addressed, for instance, the harmonization of inclusion of carbohydrates with degree of polymerization (DP) 3-9 was left to national authorities. Dr. Jones noted that it is important to allow 1) appropriate interpretation of fibre's health benefits in many different nutrition studies, 2) comparison of fibre intakes across countries and regions, and 3) accurate communication and labeling of the fibre content of foods. There has been neither scientific basis for a cut-off point at DP <10 nor readily applicable analytical methods to distinguish DP 3-9 from DP <10. Other aspects of the definition include the need for harmonized measurement methods as well as the agreed beneficial

physiological effects. Apart from highlighting the evidence of dietary fibre health benefits, she also shared the large gap between intakes and requirements around the world. Claims for fibre are also allowed on packages in various countries e.g. function claims being permitted in Thailand and Malaysia, and health claims permitted in USA and Canada.



Dr. Jones and symposium participants.

Prof. Bob Rastall, University of Reading, UK, shared on prebiotics, which are food components that escape digestion in the small intestine and are able to reach the colon largely intact,

thereby allowing selective proliferation of beneficial bacteria and stimulation of beneficial microbial activities. He illustrated possible pathways that may confer the physiological effect and the evidences for health benefit, from improved bowel health, prevention of allergy to inhibition of adhesion of pathogens. Metabolites produced by the colonic microbiota may also impact on health and is increasingly being studied. All recognized prebiotics are carbohydrates, with fructo-oligosaccharides, inulin and galacto-oligosaccharides being the only prebiotics on the European market. There is a much wider range of oligosaccharides recognized as prebiotics in Japan, and many more are being investigated for their potential. In the European Union, the European Food Safety Authority (EFSA) has yet to approve health claims for prebiotics, and has concluded that a cause and effect relationship has not been established between the consumption of prebiotics and a beneficial physiological effect related to increasing numbers of gastro-intestinal microorganisms. Nonetheless, countries in the region such as Singapore and Malaysia allow

several nutrient function claims related to prebiotics.

Prof. Pongtorn Sungpuag, Institute of Nutrition, Mahidol University, Thailand, shared the development of analytical methods for dietary fibre along with updates on the definition dietary fibre definition. Various AOAC official methods of analysis allow the determination of total dietary fibre, insoluble and soluble dietary fibre, -D-glucans, fructans, polydextrose, transgalacto-oligosaccharides, resistant starch, and resistant maltodextrin. These available methods should be adequate for determining any type of dietary fibre in the human diet; however, some overlapping or double-counting could occur if combinations of these methods are used in the determination. In line with the new Codex definition in 2009, AOAC released a new method to determine total dietary fibre in foods using enzymatic-gravimetric-liquid chromatography method. The method also allows separation of high molecular weight and low molecular weight soluble dietary fibre and is hoped to resolve the discrepancy in dietary fibre determination.

Dietary Recommendations and Consumption Patterns in Asia

Overview of Whole-grains Consumption

In both Singapore and Malaysia, Dr. E-Siong Tee, TES NutriHealth Strategic Consultancy, Malaysia, shared on **consumption patterns and dietary guidance for carbohydrate grains in the Asian diet**. Food consumption data from Malaysia, Singapore and the Philippines reaffirmed that rice is the main staple of populations in the region. However, **data on whole-grains consumption in the region is lacking**. Dietary guidelines from Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore, and Thailand have a specific key message or supporting statement that recommend the consumption of rice and other cereal grains, with most countries specifically mentioning that rice is one of the cereals that should provide the most daily energy needs. Reference to whole-grains – whereby whole-grains consumption is encouraged - is only made in the key messages of the dietary guidelines of Malaysia and Singapore, while the dietary guidelines of Thailand, China, and India make some references to whole-grains or unpolished rice. On the other hand, dietary guidelines of Australia, Canada and USA emphasize the importance of consuming more whole-grain foods and provide detailed scientific rationale for their consumption.

With regards to regulatory aspects of whole-grains in Southeast Asia, only Singapore makes provision for health claims and details the labeling requirements for whole-grain foods. Nevertheless, countries in the region do provide frameworks where applications for additional health claims can be made. **Dr. Tee concluded that dietary guidelines in most countries in Southeast Asia need to highlight the importance of whole-grain foods, and that all stakeholders must play their roles to promote the consumption of whole-grain foods. Appropriate regulations on issues ranging from definition, labeling, to health claims, are also needed to facilitate the promotion and increased consumption of whole-grain foods.**



Dr. Tee E-Siong, Scientific Director and Country Coordinator of ILSI SEA Region Malaysia Country Committee



Participants at the Malaysia seminar browsing through ILSI publications

Improving Carbohydrate Quality in the Food Supply Chain and Diet

An Australian Case Example of Product Research and Development

A successful example of research efforts to deliver a new whole-grain ingredient for producing food products with substantiated benefits for human health was illustrated by Dr. Anthony Bird, Food Futures Flagship, the Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia. CSIRO's multidisciplinary research capability in cereal genetics and human nutrition has led to the successful development of BARLEYmax™, a new hull-less barley variety which contains approximately two times more dietary fibre and four times more resistant starch than regular grains. A series of in vitro screening studies followed by nutritional trials in animals and humans were conducted to substantiate the health benefits of BARLEYmax™. Preclinical studies provided an insight into the mechanisms of benefit of BARLEYmax™, and subsequent randomized controlled trials in healthy volunteers demonstrated that a range of foods produced with BARLEYmax™ had favorable effects on a range of biomarkers of large bowel health, as well as improving indices of metabolic health.

Wholemeal flour from this cereal incorporates readily into a range of acceptable processed foods. BARLEYmax™ not only enhances the nutritional quality of a range of prototype consumer foods, it also improves texture and enhances flavor with a pleasant 'nutty' taste. The successful research results prompted CSIRO to form a joint venture with Australian Capital Ventures Ltd to breed the new grain varieties and create finished products for consumers. A range of breakfast cereals containing BARLEYmax™ currently available in Australian supermarkets are met with good sales response and several more convenience products are soon to be launched.

The Industry Perspective on Whole-grains

Dr. David Roberts, Roberts Consulting, Australia, shared the **Australian experience in improving carbohydrate quality in the food supply chain and diet**. The policy framework for improving carbohydrate quality in the food supply has been in place for over 20 years in Australia, with dietary guidelines exhorting the population to "eat plenty of cereals (including breads, rice, pasta and noodles), preferably whole-grain" and "consume only moderate amounts of sugars and foods containing added sugars". This guidance is, however, not

always followed, perhaps due to several reasons: complexity of the message; lack of availability of tasty and affordable nutritious products; and the lack of a health claims standard that would permit industry to promote the message through appropriate evidence-based health claims.

One industry response was the establishment of Go Grains Health and Nutrition (GGHN) Limited, which takes a leadership role in promoting, and defending, consumption of grains and grain-based foods through review of scientific evidence of the role, health benefits, and recommended intake of grain-based foods, communication and education initiatives, etc. Another effort is the GI symbol program which standardize and regulate the use of GI term and symbol as a claim for which testing is required. Communicating these benefits is a challenge and is probably best achieved by public/private efforts across the supply chain from farm to fork.



Participants catching up during tea break

Mr. Vallop Manathanya, Bangsue Chia Meng Rice Mill Co., Thailand, shared an industry perspective of making a difference with whole-grain rice. He highlighted the nutritional value of whole-grain rice which is rich in vitamin, minerals and fibres. Different varieties of whole-grain rice such as Hom Mali rice, Black Glutinous rice, RiceBerry rice, germinated rice of different varieties, etc. are available in Thailand. Although the market size for whole-grain rice is still very small compared to that of milled rice, it is gradually increasing. Apart from the raw whole-grain rice sold in the market, there is also a number of innovative products in the form of ready-to-eat and ready-to-drink products which will help increase the use and consumption of whole-grain rice.

Two other presentations were made by representatives from the food industry, namely Ms. Nilani Sritharan, Cereal Partners, Malaysia, and Ms. Hazlinah Harun, Gardenia Bakeries (KL) Sdn Bhd, Malaysia. They described industry efforts to increase whole-grains consumption, including efforts to increase availability of whole-grain products, regulatory challenges, and technological considerations.



Participants at the symposium held in Singapore

The Industry Perspective on Dietary Fibre and Prebiotics

Mr. Wim Caers, Beneo Group, Belgium, shared on **oligosaccharides (carbohydrates with DP 3-9) and its commercial application as dietary fibres and prebiotics**. Following up on Dr. Jones' presentation, Mr. Caers mentioned that DP 3-9 has been part of the dietary fibre definition by many regulatory and scientific organizations and institutions including EU, EFSA, ILSI, AOAC, FSANZ, etc. Most national authorities have also confirmed in writing that certain non-digestible oligosaccharides (NDOs) are dietary fibres and thus, NDOs already have a long history of dietary fibre labelling in many parts of the world. As most NDOs are soluble, they are easier to formulate and provide excellent organoleptic properties to the final food product; its inclusion as dietary fibre will therefore stimulate product innovation and help bridge the existing gap between the actual and recommended dietary fibre intake. Many NDOs are also regarded as prebiotics. Non-digestibility in the upper part of the gastro-intestinal tract is the attribute that both dietary fibre and prebiotics have in common.

Mr. Hiroaki Hamano, Danisco, Japan, shared on **polydextrose**, a randomly cross-linked polymer of glucose and sorbitol with average DP of 12 and average molecular weight of 2000, and **its physiological and health functions as dietary fibre**. Evidence have shown that polydextrose increased stool quality and quantity, decreased faecal and colonic pH, increased population of beneficial bacteria, SCFA Production, among others. The use of polydextrose is approved in over 60 countries worldwide. Under Japan's FOSHU (Foods for Specified Health Use) system, polydextrose has a recommended daily dose of 7-8g and a claim that it helps to regulate gastro-intestinal condition is allowed.

The Public Health Perspective : Encouraging Whole-Grains Consumption



Dr. Grace Soon, Health Promotion Board, Singapore

Singapore

Dr. Grace Soon, Health Promotion Board (HPB), Singapore, shared **Singapore's "private, people, and public partnership" approach in promoting whole-grain consumption**. Although Singapore's dietary guidance recommends consumption of two to three servings of whole-grain foods, data from the latest 2010 National Nutrition Survey have shown that almost nine in ten Singapore residents consume less than two servings of whole-grain foods each day. When surveyed, consumers mentioned less accessibility, price and taste of whole-grain foods, as well as lack of awareness of what whole-grains are and how to cook them, as some of the barriers to increasing their consumption.



Panel discussion at the symposium held in Singapore

To tackle this, HPB has worked closely with the people (local community), public (such as Agri-Food and Veterinary Authority (AVA), National Environment Agency) and private (food industry) sectors to develop a sustainable model to address both the food supply, and demand for whole-grain foods. HPB has been engaging the food industry to increase the availability and variety of whole-grain products, and this effort has led to the introduction of whole-grain versions of noodles, bread, and Chinese steamed buns into the market. Under HPB's established Healthier Choice Symbol (HCS) Programme, food products meeting a certain level of whole-grain content can carry the "Higher in Whole-grains" HCS logo. Qualified products may also apply for the newly-approved AVA-HPB health claims that describe diets rich in whole-grains may reduce the risk of heart diseases and cancers. Some of these whole-grain products have made their way into supermarkets, as well as the food service sector, including hawker centres and restaurants. Through various campaigns, HPB works with retailers to make whole-grain products affordable, as well as with food service establishments to incorporate whole-grains in their menus. In addition, HPB works with grassroots and community partners to increase the awareness and demand for these products through culinary cooking classes, supermarket tours, and food trails.

Malaysia

At the seminar's panel discussion among public health officials, academia and industry representatives, it was recognized that although the Malaysian dietary guidelines have highlighted the importance of whole-grains, promotion of their consumption need to be further intensified. There was general agreement that all stakeholders need to play a role in helping consumers meet the recommended intake of whole-grain foods. This includes health authorities, professional bodies, consumer bodies and the food industry.

There was also consensus that data on whole-grains consumption in Malaysia needs to be obtained. Methodologies for obtaining such data also need to be refined to obtain accurate information. **Efforts to promote whole-grain consumption must be continuously emphasized by nutritionists, and consumers need to be made aware that their current intake of whole-grains is extremely low**. This is not surprising, as consumer understanding on the benefits and importance of whole-grains is lacking. It is essential to provide consumers with a good understanding of what whole-grains are and their health benefits. Increased efforts from the Ministry of Health and the Nutrition Society of Malaysia would be needed to highlight the importance of whole-grains consumption.

Regulatory Updates on Definitions and Claims

Singapore

Mr. Sean Wong, AVA, Singapore shared that **Singapore's Food (Amendment) Regulations 2011 has introduced a new standard on "whole-grain"**, defining whole-grain as the intact grain or the dehulled, ground, milled, cracked or flaked grain where the constituents (endosperm, germ and bran) are present in such proportions that represent the typical ratio of those constituents occurring in the whole cereal, and includes wholemeal.

To be labeled as "whole-grain", food products must fall within, or are made from ingredients that fall within the definition of whole-grain, and must be qualified immediately by words indicating the percentage of whole-grain ingredients used. Relevant standards in the previous Regulations such as "whole-grain rice" were also updated while other relevant standards such as "wholemeal, whole wheat or entire wheat flour", "wholemeal bread" and "labeling of bakery products" remain unchanged. Future challenges faced include expansion of standards and use of claims to better regulate whole-grain products and to facilitate trade in introducing more whole-grain products and subsequently leading to increased consumption of whole-grains.

Thailand

Ms Jureerat Hokiart, Food and Drug Administration, Thailand, provided updates on Thailand's regulatory status of dietary fibre and prebiotics. Dietary fibre is included in the ministerial notification of nutrition labeling and Thai FDA announcement of approved positive nutrient function claims

- "Dietary fibre helps increase mass in digestive system and stimulate bowel movement", but its definition has yet to be established. Thai FDA also allows nutrient content and comparative claims on dietary fibre. Ingredients used as a source of fibre in Thailand include inulin, fructo- and galacto-oligosaccharide, resistant maltodextrin, resistant starch, glucomannan, cellulose / hemicelluloses, vegetable gums, pectin, and polydextrose. Thai FDA intends to establish and include the definition of dietary fibre in the ministerial notification of nutrition labeling which is in the drafting process; and issue on DP 3-9 will be discussed. Analytical method used by Thai FDA will follow Codex guidelines, and it also aims to improve positive nutrition claims and set health claims regulation relating to dietary fibre. The guidelines and criteria on evaluation of safety, efficacy and health claim of prebiotics in food products is also in the drafting process.



Speakers and organizers of the seminar held in Thailand.
(L-R) : Prof. Pongtorn Sungpuag, Mr. Wim Caers, Dr. Anadi Nithithamyong, Prof. Bob Rastall, Dr. Julie Jones, Mr. Hiroaki Hamano, Ms. Pauline Chan



Speakers and organizers of the symposium held in Singapore
(L-R) : Dr. E-Siong Tee, Dr. Rodolfo Florentino, Dr. David Roberts, Dr. Julie Jones, Mr. Geoffrey Smith, Dr. Anthony Bird, Mr. Vallop Manathanya, Mrs. Boon Yee Yeong, Mr. Sean Wong, Dr. Grace Soon, Ms. Mia Isabelle

Conclusion

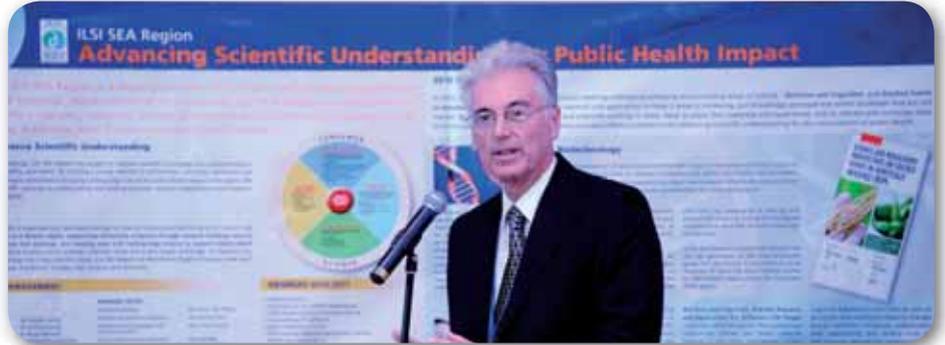
This series of meetings provided timely updates and a better understanding among ILSI SEA Region's stakeholders of the latest science on carbohydrates' role in health, current dietary recommendations and consumption patterns, regulatory status, as well as opportunities and challenges in promoting the supply and consumption of quality carbohydrates.

ILSI SEA Region Annual Meeting

ILSI SEA Region's 2011 Annual Meeting cum Science Symposium was held in Singapore from April 19 – 20, 2011 at the Pan Pacific Singapore. The meeting was well-attended by our Member Representatives, Board of Directors, Scientific Advisors, as well as representatives from our partner institutions and organizations. Many attendees traveled to Singapore from the region, and enjoyed the opportunity to gain updates on ILSI SEA Region's achievements over the past year and its plans for the year ahead, as well as to meet with old and new friends.



Dr. Roger Bektash, Vice President, ILSI SEA Region



Dr. Dave Roberts, President of ILSI SEA Region - Australasia



Group photograph of ILSI SEA Region Board of Directors and Scientific Advisors

Front Row (L-R): Ms. Yoko Ogiwara, Dr. Frederic Aymes, Dr. Harvey Glick, Dr. Roger Bektash, Mrs. Boon Yee Yeong, Mr. Geoffrey Smith, Dr. Leon Gorris.

Back Row (L-R): Dr. Widjaja Lukito, Dr. Corazon Barba, Dr. Rodolfo Florentino, Dr. Sushila Chang, Mr. Takashi Togami, Dr. E-Siong Tee



Dr. Woon-Puay Koh, National University of Singapore; and Dr. Sushila Chang, Co-Vice President, ILSI SEA Region



Mrs. Boon Yee Yeong, Executive Director, ILSI SEA Region; and Mr. Geoffrey Smith, President, ILSI SEA Region



Mr. Takashi Togami, Executive Director, ILSI Japan Center for Health Promotion, sharing on collaborative programs with ILSI SEA Region



Mr. Geoffrey Smith presenting the ILSI SEA Region Recognition Award 2011 to Dr. Hataya Kongchuntuck for her contributions as a Member Director on ILSI SEA Region's Board of Directors



Dr. Emorn Wasantwisut, Mahidol University, Thailand; Dr. Vongsvat Kosulwat, Mead Johnson Thailand; and Dr. Siti Muslimatun, SEAMEO RECFON, Indonesia



Participants of the Annual Meeting enjoying the tea-break and ILSI publications display

XIth Asian Congress of Nutrition



ILSI SEA Region Awards Prizes for Best Presentation and Best Posters

The XIth Asian Congress of Nutrition (ACN) was held in Singapore from July 13 – 16, 2011. The ACN takes place every four years, and is the premier regional nutrition conference in Asia, supported by the nutrition and dietetic societies located in Asia. This year's Congress focused on the theme of "**Nutritional Well-being for a Progressive Asia: Opportunities and Challenges**", and addressed the many critical social and nutritional issues relevant to the Asian region, where changes in infrastructure, technology, economics and communications are rapid. Nutrition experts from around Asia and the world gathered at the Congress to share the latest science and research. Over 1,000 participants including nutritionists, dietitians, researchers and public health professionals from Asia, Europe, North and South America attended.

ILSI's active participation at the ACN included the organization and support of a lively symposium session on Functional Foods that was well-attended, and an exhibition booth to showcase ILSI publications from its various branches. In addition, ILSI SEA Region also awarded prizes for Best Presentation and Best Posters at the closing ceremony of the Congress.



ILSI's exhibition booth at the XIth Asian Congress of Nutrition, well-stocked with publications from the various ILSI branches around the world



Mr. Geoffrey Smith, ILSI SEA Region's President, presenting the Best Poster prize to one of the recipients

ILSI was honored to select and present prizes for the best posters of the entire congress, as well as the best "free" oral presentation. There were over 300 posters displayed at the conference with many of excellent quality, so the judges had a difficult task. The posters were selected on the basis of excellence in scientific content, relevance to important nutritional priorities and issues, and competence in presentation. Another criterion was to encourage further scientific work in the selected fields in the region. The three poster prize winners each received a certificate and US\$500 from ILSI SEA Region.

The three winners of the Best Poster prizes were:

- 1) **Chu et.al., The effectiveness of transtheoretical model and web-based nutrition intervention plus e-mail counseling on overweight and obese college students**
- 2) **Takahashi et.al, Mild caloric restriction up-regulates the expression of prohibitin: A proteome study**
- 3) **van der Beek, The role of fat quality in the postnatal diet for prevention of obesity in later life**

Over 50 "free" oral presentations were made in eight separate sessions, which included Question & Answer sessions. The best "free" oral paper was judged on presentation effectiveness and scientific excellence, and received a certificate and US\$1,000 from ILSI SEA Region. The winner for the best "free" oral presentation was **Dr. Abu A Shamim, The JIVitA Maternal and Child Health Research Project, Gaibandha and Johns Hopkins Bangladesh, Dhaka, Bangladesh.** He presented the results of their study "**Tocopherol, Tocopherol and Vitamin A Status And Risk Of Miscarriage, Perinatal Mortality And Preterm Delivery In Rural North-western Bangladesh**".

Symposium Session on Functional Foods and Health

A great deal of attention has been given to the potential health significance of bioactive or functional components other than nutrients that are found in foods as they are believed to be able to serve physiological roles beyond provisions of basic nutrient requirements. Foods containing such components have been termed "functional foods". **ILSI SEA Region's symposium on Functional Foods and Health at the ACN included five presentations covering various aspects of the topic.**

To commence the symposium, Dr. E-Siong Tee, Scientific Director, ILSI SEA Region provided an overview of the **Development and Status of Functional Foods in Asia**. To date, there is no unanimously accepted global definition of functional foods. The term "functional foods" is also currently not used in any of the relevant regulations. The approach by regulatory agencies towards these foods is therefore focused on the health claims permitted and their scientific substantiation.

ILSI SEA Region has been in the forefront of scientific activities for more than 15 years, to promote a harmonized development of functional foods in the region. It organized the First International Symposium on East-West Perspectives of Functional Foods in 1995. Subsequently, a series of six seminars and workshops has been organized since 2003, the latest being in September 2010, participated by officials of regulatory agencies in Southeast Asia, as well as research scientists in the Asia Pacific region. ILSI SEA Region publications on functional foods include a suggested framework and guidelines for the scientific substantiation and safety evaluation of functional foods.

There have been major regulatory developments in health claims in Asia, specifically other function claims and disease risk reduction claims. These claims focus on the role of food bioactive or functional components in improving or modifying a physiological function or promoting health. This presentation reviews the health claim status in several Southeast Asian countries (Brunei, Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam) as well as China and Japan. Other function claims are permitted in all countries, except in China and Thailand. The claims relate to several bioactive components including several dietary fibres and non-digestible oligosaccharides, and plant sterols. Disease risk reduction claims are considered higher level claims and are permitted only in a few countries, namely Indonesia, Philippines and Japan, and only for a few nutrients or bioactive compounds.

There are general similarities in the regulatory framework for the approval of health claims. All regulatory authorities require proper scientific substantiation of health claims. **There will certainly be increased interest and activities in the Asian region amongst consumers, food industry and regulatory agencies on the health promoting properties of functional foods and ingredients. Opportunities also exist for discussions and networking among countries in the region, e.g. through ILSI SEA Region's series of workshops.**

The clear aims of global legislation on the scientific substantiation of health claims are to achieve a high degree of consumer protection, to ensure confidence in claims on foods, to promote fair trade, to stimulate academic research and to encourage product innovation. On this specific topic, Prof. David P. Richardson, DPR Nutrition Ltd., UK spoke on **Scientific Substantiation for Functional Foods - How Much Evidence Is Enough?** The presentation set out a critical evaluation of existing international approaches to the scientific substantiation of health claims, with particular reference to the European Food Safety Authority (EFSA), the Codex Alimentarius guidelines, the ILSI Europe PASSCLAIM consensus on criteria for the assessment of scientific support for claims on foods, and the recent ILSI Europe PROCLAIM project on the provision of guidance on proving the efficacy of foods and food constituents for health claims. Prof. Richardson emphasised that scientific assessments need to be proportionate to meet the legitimate expectations of researchers and applicants for authorisation of a health claim, and need to link the totality of the available data and weight of evidence to claims that are truthful and meaningful to consumers.

The health benefits of foods are communicated to consumers in many ways through nutrition communications. These can take many forms and are delivered under various circumstances ranging from public health communications to nutrition text books and product promotions. This topic was discussed by Prof. Linda Tapsell, Illawarra Health and Medical Research Institute and Food and Health / Smart Foods Centre, University of Wollongong, Australia in her presentation entitled **Benefits of Functional Foods: Issues for Scientific Reviews**. Traditionally, the health benefits of foods have been presented in terms of the nutritional or functional components within the foods and the effect these may have on human health. More recently, nutritional science has delivered information on the effects of foods themselves and in dietary patterns. This has been more in the context of disease prevention or risk. There have also been

advances in the methodology that drives the critical appraisal of this information so that agreed conclusions may be drawn. Prof. Tapsell's presentation discussed the issues surrounding review methodology and the challenges these present for the food and nutrition field, with some examples of how the evidence for the benefits of functional foods might be considered.

The remaining two presentations were focused on specific functional foods. The presentation of Prof. Jonathan Hodgson, University of Western Australia, Australia, titled **Evidence on Polyphenol-Rich Functional Foods for Cardiovascular Health - Mechanisms and Impacts**, was focused on polyphenols, which are natural phytochemicals that are currently of much nutritional and therapeutic interest. There are many thousands of structurally distinct polyphenols present in the human diet: the main classes include flavonoids and phenolic acids. The bioactivity of the different classes of polyphenols and of polyphenols with different structural characteristics can vary widely. Thus, the mechanisms of action and the ultimate health impact of specific polyphenol-rich foods may vary. There is mounting evidence that polyphenols and foods rich in polyphenols can make an important contribution to cardiovascular health. However, because bioactivity of different flavonoids varies, health effects cannot be generalized to all polyphenol-rich foods.

The last presentation in this symposium was presented by Prof. Yuan-Kun Lee, National University of Singapore, Singapore, focused on the **Effects of Functional Foods and Components on Microbiota and Gut Health**. Gastrointestinal microbes play important roles in the health and disease of the host. Health beneficial microbes are termed probiotics. Clinical studies have demonstrated their effects on lactose maldigestion, dental caries, diarrhoea, Irritable Bowel syndrome and Inflammatory Bowel Disease, gastrointestinal and respiratory tract infections, allergic diseases, cancers, and serum cholesterol. Complex carbohydrates, oligosaccharides are termed prebiotics. They are non-digestible but fermentable, thus selectively stimulate the proliferation and/or activity of desirable intestinal bacterial population. Scientific studies suggest that probiotics and dietary components and their metabolites exert significant effects on our health and well-being. Diet is cultural and geographical based; knowledge of the interaction of diet and intestinal microbiota opens new possibilities for health promotion and disease prevention.

A Bold New Logo for ILSI

Since its inception in 1978, ILSI as a global organization has been represented by its original logo depicting a globe and a microscope. Its mission has been, and continues to be, to improve public health and well-being around the world by bringing together scientists from industry, academia and government to collaborate in generating scientific information and encouraging scientific dialogue.

Through its work and achievements over the past three decades, ILSI has established itself as a credible and unique scientific organization with the ability to engage key stakeholders to address critical issues in nutrition and health promotion, food safety, risk assessment, and the environment through science-based approaches and decision-making.

In a fast-changing world where new scientific discoveries emerge rapidly and health issues evolve constantly, ILSI has taken steps to maintain its relevance and strengthen its scientific resources. One of our key efforts to refresh and bolster our global image for the 21st century is the introduction of a bold new logo which symbolizes our organization's worldwide reach and dynamism.

The development of the new logo began in 2010, and included surveys among our members, Board of Trustees and staff, as well as information and knowledge gained through the development of a new marketing strategy in mid-2010. The new visual identity for ILSI was finally approved for adoption by the Board of Trustees in January 2011.

Over the next few months, ILSI's new visual identity will be implemented across its communications materials and website. With this new milestone, ILSI looks forward to taking bold steps in the coming years and scaling greater heights in its mission to improve public health and well-being around the world.

The design of the new ILSI logo captures the dynamism of our global organization, and is a symbol that represents "The Whole is Greater than the Sum of its Parts". This is a phrase we use regularly to convey the unique strength of ILSI, which is reinforced by its global network of branches, the ILSI Research Foundation, ILSI's international committees, stakeholders, partners and collaborators.

The logo for ILSI SEA Region closely follows the new design, with our branch's name incorporated within the design.



ILSI

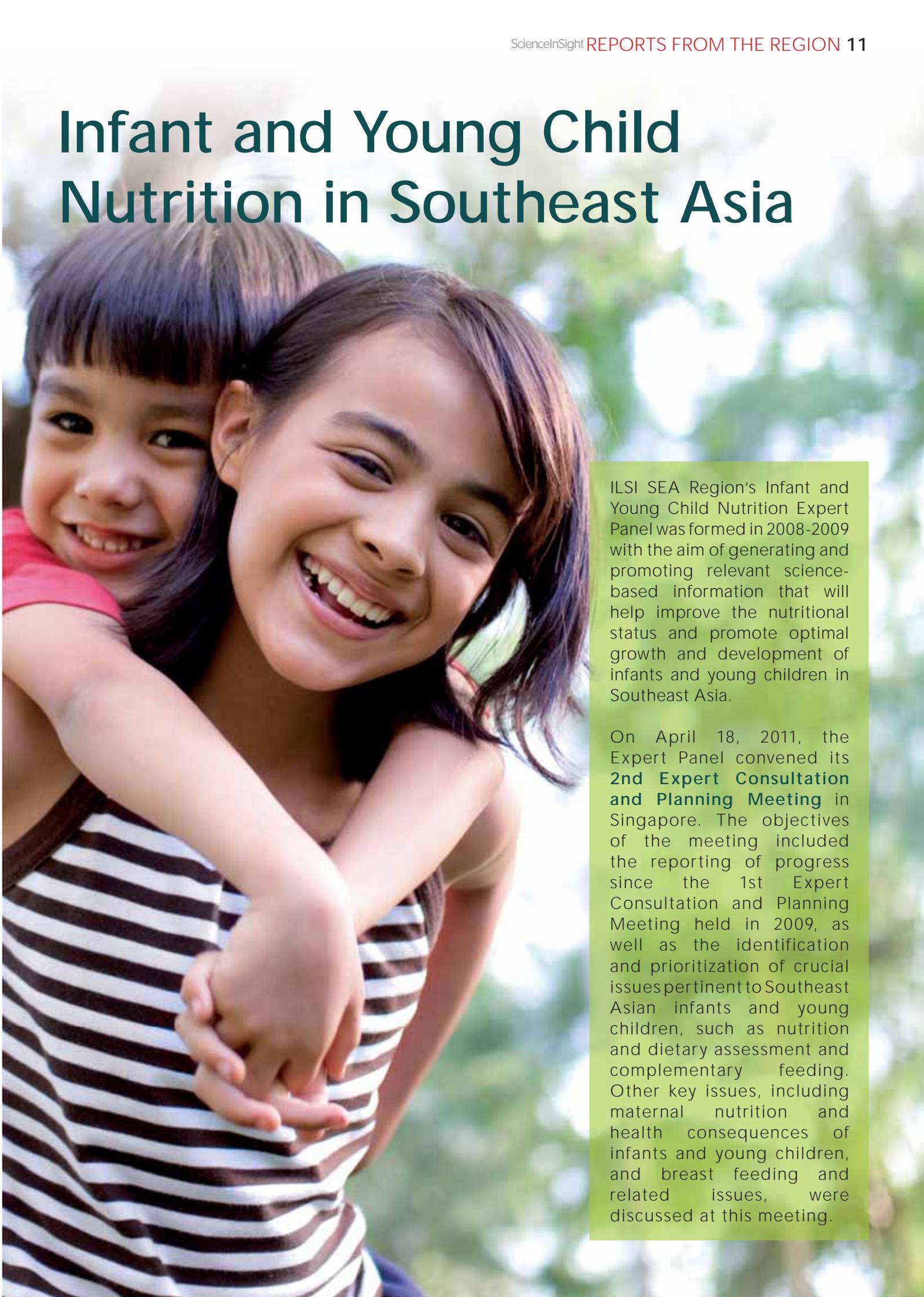
International Life
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ILSI

Southeast
Asia Region

Infant and Young Child Nutrition in Southeast Asia

A young girl with long dark hair, wearing a black and white striped tank top, is smiling broadly and holding a younger child in a red shirt. The background is a soft-focus outdoor setting with green foliage.

ILSI SEA Region's Infant and Young Child Nutrition Expert Panel was formed in 2008-2009 with the aim of generating and promoting relevant science-based information that will help improve the nutritional status and promote optimal growth and development of infants and young children in Southeast Asia.

On April 18, 2011, the Expert Panel convened its **2nd Expert Consultation and Planning Meeting** in Singapore. The objectives of the meeting included the reporting of progress since the 1st Expert Consultation and Planning Meeting held in 2009, as well as the identification and prioritization of crucial issues pertinent to Southeast Asian infants and young children, such as nutrition and dietary assessment and complementary feeding. Other key issues, including maternal nutrition and health consequences of infants and young children, and breast feeding and related issues, were discussed at this meeting.

Current Issues; Knowledge and Research Gaps



The first session of the meeting, chaired by Prof. Corazon Barba, A2Z, Philippines, focused on current issues in the field of infant and young child nutrition, as well as the knowledge and research gaps that need to be addressed.

Prof. Emorn Wasantwisut, Mahidol University, Thailand, provided an **overview of the United Nation's Millennium Development Goals, as well as an overview of findings from the Lancet's series on maternal and child undernutrition**. Prof. Wasantwisut also shared on the Scaling Up Nutrition framework for action, and short-term / long-term effects of undernutrition in early childhood.

In terms of nutrition policies and programs, Prof. Emorn pointed out key considerations that are required for effective implementation. These include decision-making at country level, cost effectiveness of interventions, as well as alignment and coordination among intervention programs to avoid duplication. She also highlighted several research priorities, such as the role of micronutrient deficiencies in the context of diet-related non-communicable disease (obesity, diabetes, cardiovascular disease) and long-term follow-up of micronutrient interventions on maternal health and child development.

Next, Dr. Maria Antonia Tuazon, nutrition consultant from the Philippines, presented on the **key findings of a review commissioned by ILSI SEA Region in 2010 to examine the status of infant, young child and maternal nutrition in 10 Southeast Asian countries and China**. This review was commissioned and conducted based on the recommendations of the Expert Panel's 1st Expert Consultation in 2009.

Comparing the levels of socio-economic development of the different countries being reviewed, Dr. Tuazon noted that a wide difference exists in terms of Human Development Index (HDI) and Gross Domestic Product (GDP) between the countries. Many infants are born of low birth weight in the 11 countries, especially the Philippines, Myanmar and Cambodia. Percentage of malnutrition among children aged 1-5 years from the countries and prevalence of certain micronutrient deficiencies, such as vitamin A and zinc, were shared.

Infant feeding practices among Southeast Asia countries and China were also presented. Food taboos during and after pregnancy or during the lactation period is one of the factors that contributes to poor maternal health. There is also wide disparity in the duration of breastfeeding and the age when complementary foods are first given to infants. The review also found that the prevalence of breastfeeding is higher in rural areas compared to urban areas.

Dr. Tuazon recommended that nutrition data for young children and women should be collected regularly in order to identify the nutrition problems and enable comparison across countries. Moreover, the usage of existing monitoring and surveillance systems for risk assessment and evidence-based planning should be maximized. She recommended there should be more research to further quantify and understand the malnutrition problem in Southeast Asian countries, as one of the limitations of the review is limited or no data for some indicators in several countries. She also added that the nutrition indicators to be collected should be harmonized.

Nutrition and Dietary Assessment for Infants and Young Children

In the second session of the meeting chaired by Dr. Wasantwisut, the focus turned to the topic of nutrition and dietary assessment for infants and young children. Prof. Khor Geok Lin, International Medical University, Malaysia, presented the backdrop on **childhood nutritional status and growth faltering in Southeast Asia**. Prof. Khor emphasized the importance of the “Window of Opportunity” for improving nutrition – from pre-pregnancy until 18 to 24 months of age. The health consequences of malnutrition during this period is usually irreversible.

So how do we find out if mothers and infants have an adequate intake of micronutrients? Prof. Khor highlighted the European Micronutrient Recommendations Aligned Network of Excellence (EURRECA), and the

lessons learnt from EURRECA's dietary assessment methods for micronutrient intake. One of the key learnings is the need to assess the quality of validation studies evaluating dietary questionnaires. Besides the Food Frequency Questionnaire (FFQ), the other method of dietary assessment is the 24-hour dietary recall and food record method which is based on foods and amounts actually consumed by an individual on one or more specific days. However, steps must also be taken to reduce errors in when using the dietary recall method.

Following Prof. Khor's introductory presentation was a constructive discussion among the Expert Panel on the **Methodology of Nutrition and Dietary Assessment**. It was agreed that assessment of dietary

intake of infants and young children is a challenging issue (eg. difficulty of measuring breast milk intake). It is also difficult to confirm the relationship between diet and biochemical parameters as diet takes time to have effects on biochemical results. It was further agreed that it is important for Southeast Asian countries to use simple and practical methods to generate and interpret data. Thus, the usage of “simpler tools” for dietary assessment and validation of such tools is necessary. All the experts agreed that more research is needed to identify more specific issues and needs of the countries in this region, especially in relation to micronutrients and health (eg. the role of zinc supplementation on diarrhea among non-malnourished children).

Priority Issues and Areas for Action

Wrapping up the meeting, the **Expert Panel concurred that more data would be needed in several areas, which include the link between macronutrients and micronutrients for children under five years old; the link between anthropometry measures and biochemical parameters; nutritional status of pregnant and lactating women; and complementary feeding practices**. Although it was recognized that some of the less developed countries may have difficulties generating the required data, nonetheless, more comprehensive studies need to be conducted on these issues and eventually, common guidelines for Southeast Asian countries should be established.

Complementary Feeding

In the third session on complementary feeding chaired by Prof. Widjaja Lukito, SEAMEO RECFON, Indonesia, Prof. Jossie Rogacion of University of the Philippines, Philippines shared the **evidences for optimal complementary feeding practices and evidences for impact of complementary feeding**. According to Prof. Rogacion, optimal complementary feeding practices should be timely, appropriate, adequate, safe and properly-fed. Appropriate complementary feeding should start from 6 months of age with continued breast feeding up to 2 years and beyond. Emphasizing its importance, Prof. Rogacion noted that complementary feeding is one of the most cost-effective strategies for improving health and reducing morbidity and mortality in young children.

In determining the amount of complementary food required for infants and young children, it was agreed that for children who are 9 months onwards, most of the energy should be gained from complementary feeding. It was highlighted that the availability of local food and food safety issues while preparing complementary food are important for complementary feeding. It is vital to educate parents, caregivers and healthcare workers on the optimal complementary feeding practices, in order to achieve successful complementary feeding and improve the nutritional status of infants and young children.

Although the breast feeding rate in some Southeast Asian countries is decreasing despite on-going education programs, it was agreed that it is still important to comply with the WHO guidelines on 6 months exclusive breast feeding. More data and strong evidences on maternal nutrition from Southeast Asia region are needed to reveal the actual status and practices of infant and young child feeding.



A Risk-based Approach to Management of Contaminants in Food

Food contamination due to either pathogenic microorganisms or chemicals is becoming an increasing source of concern among the general public, as well as to government authorities who are facing growing challenges in dealing with food safety issues with limited available resources. In response to the need for more knowledge on science-based approaches as well as efficient and comprehensive methods for dealing with food contaminants, ILSI SEA Region organized a **Seminar on Food Contaminants: Emerging Issues and Risk Management Strategies** held at Nanyang Polytechnic, Singapore on January 11, 2011. The seminar was organized in collaboration with the Agri-Food and Veterinary Authority of Singapore, and was attended by 250 participants from government agencies, industry and academia.



An International “Farm to Table” Approach

Global climate change and urbanization are among some of the factors that have contributed to the emergence of new food safety threats. Dr. Peter Ben Embarek, World Health Organization, China, emphasized that **international cooperation is critical in dealing with emerging food safety issues**. Collaborative efforts in research and surveillance, as well as effective communication between government authorities, are necessary elements in ensuring food safety along the global supply chain. Ms. Shashi Sareen, Food and Agriculture Organization of the United Nations Regional Office for Asia and the Pacific (FAO-RAP), further reinforced this message and also highlighted the **importance of food safety in relation to global food security and international trade**. Authorities in the region were encouraged to build capacity in managing food safety, develop information exchange mechanisms, as well as to collaborate in joint activities to improve food safety among ASEAN countries. With these views in mind, Mr. Leslie Phua, Agri-Food and Veterinary Authority, Singapore, shared **Singapore's experiences in managing contaminants in food as well as its participation at international initiatives related to food safety**. He highlighted the trend among countries in adopting risk-based approaches to managing food safety, which allows for greater transparency in regulatory processes while necessitating strong collaboration between different stakeholders.

Food Analysis – A Complementary Tool in Food Safety

Although testing and analysis of food products by its own does not provide assurances of food safety, it is nonetheless an important and complementary tool in verifying that food safety measures in place to prevent the presence of contaminants in food are working correctly. Mr. Mark Richards, Agilent Technologies, provided an **overview of the overall analytical process for chemicals in food**. One of the key steps in the process is the processing of the samples prior to the actual analysis itself, as a large source of error can occur at this stage if performed incorrectly. Additionally, sampling procedures also need to be carefully designed and implemented to ensure that what is tested in the laboratory is representative of the actual situation. Dr. Sun Cuilian, Food Safety Division of the Applied Sciences Group, Health Sciences Authority (HSA) Singapore, further elaborated on the role of food analysis, in particular HSA's laboratories in supporting the AVA in its food surveillance programs, as well as serving as the WHO Collaborating Centre for Food Contaminants Monitoring, and the EU-ASEAN Reference Laboratory for Mycotoxin Analysis. As part of these mandates, HSA is also involved in training activities to help build capacity among analytical scientists in the region.

How the Industry Manages Contaminants

As key stakeholders in the food supply chain, the **industry plays a direct and very important role in ensuring that the food they produce are free from contamination that would be injurious to health**. Dr. Frederic Aymes, Nestle Quality Assurance Center, Singapore, shared some experiences of how chemical contaminants are managed using a risk-based approach on a day-to-day basis. Although chemical contaminants are less frequently linked to foodborne illnesses as compared to microbiological pathogens, they do serve as a constant and continuous source of hazards in the food processing environment. By adopting a “farm to table” approach to food safety, as well as adopting science-based food safety management systems such as HACCP and risk analysis, it is possible to reduce the occurrence of such chemical contaminants in the food chain. Complementary to the discussion on chemical contaminants, Dr. Leon Gorris, Unilever, provided an industry's view on dealing with microbiological pathogens found in the food chain. He emphasized that a “safe by design and execution” approach in developing new food products allowed for food safety to be “built-in” right from the beginning. Microbiological risk assessment as well as concepts such as Food Safety Objectives (FSO) and Performance Objectives (PO) could be used to guide risk management decisions.

9th ASEAN Food Safety Standards Harmonization Workshop



In conjunction with the seminar on Food Contaminants, ILSI SEA Region also organized the **9th edition of its ASEAN Food Safety Standards Harmonization Workshop series** from January 11 – 12, 2011. Members of the Working Group on Harmonization of ASEAN Food Safety Standards (Working Group) gathered in Singapore for the workshop. The Workshop was chaired by Dr. Roy Sparringa, National Agency for Drug and Food Control, Indonesia, who had been appointed as the new chairperson after Dr. Dedi Fardiaz retired from the position. Since 2001, the Workshop series has served as an important platform for food safety regulatory agencies from ASEAN member countries to share updates and continue with the process of harmonization of food safety standards between countries in the region. The Workshop series also provides opportunities for scientists, experts and regulators to exchange information on scientific developments and regional food safety issues.

Updates from the Region

Representatives from food safety authorities from nine of the ten ASEAN countries provided updates on the development of food safety regulations and standards in their respective countries.

Both Indonesia and Malaysia are in the process of harmonizing their food additive categorization system to be in line with the 27 functional classes of the Codex Alimentarius General Standard for Food Additives (GSFA). In Malaysia, several applications for new food additives are currently being assessed, including those for erythritol, neotame, sucrose acetate isobutyrate and asparaginase from sources of *Aspergillus niger* and *Aspergillus oryzae*. Maximum limits for certain contaminants including heavy metals and mycotoxins are also being reviewed.

With the issuance of FDA Circular No. 2010-008, the Philippines has now adopted the Codex Standard on Food Contaminants in Processed Food. While in Singapore, there are some new approvals for food additive usage such as benzoic acid, benzoates, sorbic acid and sorbates in semi-preserved fish and fish products; nisin in liquid egg products; nitrates in cheese (except for processed cheese, fresh cheese and cheese in brine); alitame as an artificial sweetener; and dimethyl polysiloxane as an anti-foaming agent in jams. In Thailand, new food additive provisions have been issued for ice structuring proteins, monopotassium tartrate and L-cysteine hydrochloride.

Ms. Tetty Helfery Sihombing, National Agency for Drug and Food Control, Indonesia, also reported on the recent incident related to findings by Taiwanese authorities of methyl para hydroxyl benzoate in soya sauce flavourings used in instant noodles produced in Indonesia. After investigation, it was learnt that the cause of the incident was due to differing food additive regulations for Taiwan and Indonesia, whereby use of the additive was allowed in Indonesia at safe levels but it was not permitted at all in Taiwan. Hence, the incident served as a good case example of the need to harmonize food safety standards to prevent similar incidents from happening in the future.

Scientific Risk Assessment as the Basis for Harmonization

One of the key issues discussed by the Working Group was the use of food safety risk assessment as the basis for harmonization efforts in the region going forward. It was recognized that risk assessment can serve as an important tool in guiding science-based decision making, such as in setting food additive standards or maximum limits for contaminants.

Some of the countries in the region have already started to apply risk assessment in their regulatory processes, such as Malaysia, which shared the country's experience in conducting a risk assessment of *Bacillus cereus* in fried rice prepared and served in Malaysian school hostels. Nevertheless, while risk assessment can play an important role in the harmonization process, there are significant gaps in the available scientific data that could be used for risk assessment, as well as a continuing need to build capacity and knowledge among risk assessors in the region to improve the quality of the assessments.

The latter could be served by scientific resources available in the region, such as by tapping into the expertise of microbiological experts from the International Commission on Microbiological Specifications in Foods (ICMSF) Sub Commission for Southeast Asia. Several members of the ICMSF Sub Commission for Southeast Asia, including Professor Son Radu, University Putra Malaysia, Dr. Mathew Lau, Nanyang Polytechnic Singapore, and Mr. Soo Chuah, Kraft Asia, were present at Workshop. The ICMSF Sub Commission expressed its willingness to collaborate with other stakeholders to improve food safety and build capacity in risk assessment in the region.

Availability of good scientific data – the other prerequisite in conducting food safety risk assessment, could be addressed by improving the analytical capacity of food analysis laboratories in the region. The importance of validating methods used for conducting food analysis, as well as the need for laboratory proficiency testing to ensure that quality scientific data can be generated and used for risk assessment purposes, were highlighted by the Working Group,

Future Outlook for Harmonization of Food Safety Standards in ASEAN

The Working Group concurred that its achievements over the past decade in harmonizing safety standards for certain food additives has reached a level of maturity, and further harmonization efforts would henceforth be implemented by the ASEAN Consultative Committee on Standards and Quality (ACCSQ) Prepared Foodstuff Product Working Group (PFPWG), which is the official body under ASEAN tasked to achieve this objective. The ASEAN Food Safety Standards Database on Food additives, established and currently maintained by ILSI SEA Region, will also be handed over to the ACCSQ PFPWG to assist in and facilitate its efforts.

Such official recognition and acceptance by ASEAN of the efforts of the Working Group and ILSI SEA Region is an important accomplishment. Nonetheless, the journey towards harmonization continues, and both the Working Group and ILSI SEA Region will now focus on harmonizing food contaminant standards through developing programs to improve regional capabilities in food safety risk assessment, as well as to maintain dialogue among stakeholders through future meetings and workshops.





GMO Analysis – the Why, What and How

ILSI SEA Region recently collaborated with the Agri-Food and Veterinary Authority (AVA) of Singapore in organizing a **Seminar on Recent Developments and Challenges in GMO Analysis** on June 8, 2011. The purpose of the meeting was to share the latest scientific developments on analytical methods used to detect genetically modified organisms (GM) materials in agricultural products, as well as to preview some of the new biotechnology products that will soon be introduced. Approximately 100 participants from ASEAN regulatory agencies, academic institutions as well as members from the food and biotechnology industry were in attendance.

Why Test for GMOs?

Rules and regulations relating to the use and labeling of GM materials in food and feed can differ from country to country. Hence, **there is a need to be able to detect and quantify GM materials found in food and agricultural products in order to comply with specific regulations in different geographical jurisdictions, particularly within the context of international trade of agricultural products.** Dr. Guy Van Den Eede, European Commission Joint Research Centre, provided a summary of current activities and regulatory requirements in the European Union related to testing and analysis of GMOs, while Dr. Kazumi Kitta, National Food Research Institute of Japan, shared a similar overview of the situation in Japan. To provide a perspective from the food industry, Dr. Frederic Aymes, Nestle Quality Assurance Center, Singapore, shared the processes of how food manufacturers have been complying with GM-related regulatory requirements in different countries and regions.

What is in the Pipeline?

It is anticipated that a growing number of new biotechnology products will be coming onto the market in the very near future, which will invariably have an impact on current strategies and techniques for GMO detection and analysis. Mr. Greg Dana, Pioneer Hi-Bred

International and Dr. Ray Shillito, Bayer CropScience, shared information on the emerging GM traits that are in various stages of development by biotechnology developers, some of which are close to the stage of commercialization. To complement this information, Dr. Gerard Barry, International Rice Research Institute, also shared updates on the progress of development for Golden Rice, while Professor Hew Choy Leong, National University of Singapore reviewed the development of genetically modified salmon, which is likely to be the first transgenic food animal to be commercialized in the world.

How do you Detect GMOs?

Existing strategies and further advances in the field of GMO analysis were reviewed at the seminar. Mr. Larry Freese, United States Department of Agriculture explained the process of grain sampling, which is a critical step in obtaining representative samples for subsequent analysis in the laboratory. Dr Van den Eede highlighted the range of quantitative GMO detection methods currently available to detect GM materials within the laboratory environment. Mr. Dean Layton, Enviroligix, Inc, introduced protein-based techniques, which could also be used for rapid on-site detection and measurement of GM materials. As certified reference materials are a pre-requisite to be able to conduct analysis of

GMOs properly, Dr. Yang Li-Tao, Shanghai Jiaotong University, China, enlightened the audience about the overall process of development of these reference materials. Finally, Dr. Wang Zheng Ming, AVA, Singapore, highlighted some of the challenges and practical approaches that have been applied by AVA in detecting unauthorized GM rice events in their routine regulatory processes.

What are the Future Challenges?

Several challenges in GMO detection were highlighted by various speakers at the seminar. In particular, there were concerns that existing detection strategies and assays may be insufficient to deal with some of the new biotechnology products that are being brought onto the market. A clear case of such a challenge is in the detection of GM products containing stacked or combined events. Also, **the increase in the number and types of GM traits introduced also poses a challenge for methods development due to overall complexity and cost of development.** Major GM product developers, as part of their stewardship programs, are however developing analytical methods in tandem with the commercialization of their GM products; while independent scientists have also been developing validated reference methods for new GMOs that can be found in the scientific literature.

Food Security in Asia

Harmonization of Food Standards and Analytical Methods



The existence of science-based and harmonized food standards between countries is a key element in ensuring food security in our globalized world. Without harmonized food standards, food trade between countries would become hampered, resulting in potential loss of access to the abundant food resources from different parts of the world as well as wastage of perfectly good but perishable food due to unnecessary rejections and delays at the border. As such, **since 2010, ILSI SEA Region has been participating in an Asian-wide project, led by ILSI Japan and also participated by ILSI Focal Point in China and ILSI Korea, on Research on Commodity Food Standards and Methods of Analysis in Asia.** The purpose of the research project is to explore possibilities for harmonizing food standards and their respective analytical methods across Asian countries. The project has been sponsored by the Ministry of Agriculture, Forestry and Fisheries (MAFF) of Japan.

As part of this project, ILSI SEA Region co-organized the **International Conference for Sharing Information on Food Standards and Resource and Environmental Conservation for Food Industries in Asia Pacific**, held in Bangkok, Thailand on March 4, 2011. More than 100 participants from different stakeholder groups attended the meeting.

Food Standards in Asia and Harmonization Efforts

Mr. Hiroaki Hamano, then Executive Director of ILSI Japan and overall coordinator for the Asian commodity food standards harmonization project, provided a brief introduction and explanation of the progress thus far. He also shared the research results from Japan, which surveyed the overall regulatory framework

for food standards in the country, as well as standards specifications and analytical methods for certain food commodities including instant noodles, carbonated water-based beverages, frozen foods and milk products. This was followed by similar presentations sharing results from China by Dr. Li Yu, ILSI Focal Point in China,

Multi-stakeholder Approach to Food Security

Apart from producing food for consumption to meet the growing needs of Asian populations, the food industry must also play a central role in resource management and environmental conservation to ensure that sustainable food security policies set out by national governments are able to be met. This was the message delivered by Mrs. Yutaka Arai, Director of the Food Industry Policy Division, General Food Policy Bureau, MAFF, Japan, in her opening address. She also encouraged strong cooperation and sharing of information on food standards between stakeholders in Asian countries. This point was echoed by Dr. Sakchai Sriboonsue, Secretary General of the National Bureau of Agricultural Commodity and Food Standards, Thailand and Dr. Tipvon Parinyasiri, Director of the Food Control Division, Thai Food and Drug Administration. Dr. Tipvon further highlighted Thailand's National Food Committee Act of 2008 and the National Food Strategy of 2010 recently passed by the Cabinet of Thailand, which provide the policy directions to guide implementation of necessary programs to address food-related concerns in the country, which include food security, food safety, food quality, as well as food education.

While being an important initiative, discussions on food standards

harmonization, particularly among Asian countries, is not a new topic.

Prof. Dedi Fardiaz, Bogor Agricultural University, Indonesia shared the ongoing efforts to harmonize food safety standards through the annual **ASEAN Food Safety Standards Harmonization Workshop series**, which was initiated and facilitated by ILSI Southeast Asia Region over the past decade. The workshop series has complemented the work of the ASEAN Consultative Committee on Standards and Quality (ACCSQ) Prepared Foodstuff Working Group (PFPWG), the official ASEAN working group responsible for developing mutual recognition agreements and harmonizing processed food standards, by providing a platform to share scientific information as well as for interaction between the different stakeholders. Apart from processed food standards, Mr. Gilberto Layese, Bureau of Agricultural and Fisheries Product Standards of the Philippines, explained the process of harmonization

for agricultural product standards within ASEAN. The Task Force on ASEAN Standards for Horticultural Products has so far developed regional standards for at least 19 agricultural products. Finally, Dr. Pichet Itkor, Food Industry Club of the Federation of Thai Industries outlined the role of the food industry in supporting food standards harmonization efforts by national authorities. He pointed out that continuous dialogue between government and industry is essential in attaining this objective.

Sustainable Food Production and Supply

Although much can be achieved to improve food security through harmonization of food standards, there is still the need for initiatives on other fronts to establish a sustainable food supply to guarantee food security

in the region. Dr. Subash Dasgupta, Food and Agricultural Organization Regional Office for Asia and the Pacific explained how the global food supply system plays a key role in delivering food to different populations. He also raised some of the issues and emerging challenges impacting the system, such as rapid population growth, changing food consumption patterns in relation to income, and increasing urbanization around the world. The final presentation of the day was provided by Dr. Suradech Thiapairat from Ajinomoto Thailand, who shared a case example in resource and environmental conservation. To reduce waste and recycle materials, the company has been developing 'co-products' in the form of liquid fertilizers by utilizing by-products from food processing as raw materials. Factories in Thailand have also been using clean energy sources, such as biomass boilers fueled by rice husks, to reduce carbon dioxide emissions.

Allergen Exposure Management

- The Australian Perspective

ILSI SEA Region Australasia, together with the Allergen Bureau, held a one-day workshop on Allergen Exposure Management on June 22, 2011 in Melbourne, Australia. Attended by participants from government agencies, food producers and scientific organisations from Australia and New Zealand, the meeting aimed to provide a scientific update on allergies in human health, allergy prevention, a summary of the VITAL process (Voluntary Incidental Trace Allergen Labelling) and a case study presentation on food contamination.

Dr. Roger Bektash, MARS Incorporated and Vice President of ILSI SEA Region, opened the session on behalf of Dr. Dave Roberts, President of ILSI SEA Region Australasia. He provided a short overview of ILSI and its mission to bring together experts from academia, government and industry across the areas of nutrition, health and food safety to collaborate, generate scientific information and encourage scientific dialogue for public health impact.

Prof. Katie Allen, Royal Children's Hospital, Melbourne was the first speaker. A paediatric gastroenterologist and an allergist, her presentation

focused on the **evidence and possible explanations for the recent rise in food allergy prevalence**. Both genetic factors (family history of allergy) and factors linked with the modern lifestyle (such as changing dietary patterns, changing intestinal flora and Vitamin D deficiency) have been linked with allergic disease. The HealthNuts study, which has recruited 5,000 one-year old infants from the community, showed that up to 10% of infants have an IgE-mediated food allergy. Recent research also showed that around 30% of Australian households have one or more members with a perceived food allergy, suggesting that a high proportion of households

may alter their shopping practices due to perceived food allergy or intolerance.

Prof. Jo Douglass, Head of Allergy, Asthma and Clinical Immunology Services, Alfred Hospital in Melbourne, presented on the **e-learning modules for anaphylaxis created by the Australasian Society of Clinical Allergy and Immunology (ASCA) for health professionals**, school and childcare workers. Although it is not an accredited course, the free modules provide knowledge and training for those parts of Australasia which currently have little or no resources in the area.

Mr. Dean Clarke, Microbiology and Allergen Laboratory Manager, National Measurement Institute, spoke about **identifying risk to allergic consumers by measuring the allergen content of foods**. He provided an update on the formation and inaugural meeting of the Allergen Testing - Special Interest Group (AT-SIG). With the aim of improving food allergen analysis and the sharing of challenges and issues, as well as to provide a forum to present emerging technologies and promote the development of reference materials and confirmation methods, the group brings together global testing laboratories, accreditation bodies, regulators, consumer advocates and industry.

Dr. Simon Brooke-Taylor, an expert in risk analysis in the food sector, spoke about the development of the VITAL process (www.allergenbureau.net/vital/) which aims to provide a **standardized allergen risk assessment tool which can be used to assist in determining appropriate voluntary allergen labeling statements**. A literature review to identify risk-based allergen thresholds has led to the formation of the VITAL grid, which describes three action levels requiring different types of labeling. However, the current limited clinical data available precluded more detailed quantitative risk assessment. Another aim of the VITAL review was to develop a quantitative risk framework based on knowledge of dose response relationships for reactions to food allergens where possible. The VITAL process developed in Australia is unique internationally and has attracted great interest in Europe and North America.

Dr. Hikmat Hayder, Senior Scientist, FSANZ and the leader of scientific work in the areas of food allergens and food intolerance at the Risk Assessment Branch, shared the outcome of the **allergen labeling review**. Since 2002, food products must carry labeling to declare the presence of common allergens; in 2006, the Australian and New Zealand Food Regulation Ministerial Council requested a review of this legislation. In undertaking the review, FSANZ considered information from food allergy support groups, the food industry, the scientific and medical literature, international regulations

and consumer and label monitoring surveys. The results of 2 consumer surveys on allergen labeling conducted in 2003-2004 and 2008-2009 were also presented. Recommendations in the review report resulted in the evaluation of the public health significance of lupin as an emerging food allergen, a support for the food industry's voluntary system to improve allergen declaration and initiation a label monitoring program to track improvements in allergen declaration practices.

Mr. Steven Pereira, Chief Information Officer, GS1 Australia, spoke about the Go Scan project and the MobileCom/B2C smartphone application. A survey conducted by GS1 Australia showed that **ability to access a trusted source of data on allergens contained in food products is of highest concern to allergic consumers**. The smartphone application is designed to allow consumers at the point of purchase to get additional information of a product through the mobile phone by scanning the product's barcode.

Prof. Mimi Tang, Director of Department of Allergy and Immunology, Royal Children's Hospital in Melbourne and Group Leader of Allergy and Immune Disorders Research at the Murdoch Children's Research Institute, spoke about recent studies in **using oral immunotherapy (OIT) to induce desensitisation** (the ability to ingest higher amounts of an allergen without reacting while taking daily doses of that allergen) and tolerance (the long lasting ability to tolerate the allergen after immunotherapy is discontinued) in food allergic individuals. While studies have shown that OIT can lead

to desensitisation, it remains unclear whether long-term tolerance can be induced. She is currently leading a study (P-POIT) investigating whether the combined administration of a probiotic (*Lactobacillus rhamnosus* GG) and peanut oral immunotherapy can enhance the development of tolerance to peanuts in peanut allergic children.

Mr. Phil Corbet, Quality and Technical Group Manager, Simplot Australia, presented a fascinating case study of peanut contamination of crumbed fish products occurring early in 2011. He detailed Simplot's processes in tracking the cause of the contamination to a soy flour mill in China, which allowed contamination of the soy flour with peanut. The flour was then sent to another Chinese factory which produced the coating for the fish. He discussed the issues related to effective allergen management given the global nature of food manufacturing and the lessons learnt for all the companies involved.

The Workshop was concluded with a presentation by Ms. Marion Brown, Coordinator of Food Safety Programs, Chisholm Institute of TAFE, on the effective use of the VITAL system. The Chisholm Institute has developed resources to ensure that there is consistency in training, while the Allergen Bureau has developed a document entitled VITAL Training: Prerequisites and Competencies Guidance Document.

The panel forums saw lively discussion around the management of allergies. The report of the meeting is under preparation and will be published in Food Australia journal in its September issue.



Speakers of the Workshop on Allergen Management Exposure

Front row (L-R) – Dr. Hikmat Hayder; Mr Dean Clarke

Back row (L-R) – Dr. Roger Bektash; Dr. Simon Brooke-Taylor; Mr. Phil Corbett; Ms. Marion Brown; Mr. Steven Pereira

Publications

ILSI SEA Region's recent publications include:

Nutrigenetics and Nutrigenomics: Viewpoints on the Current Status and Applications in Nutrition Research and Practice

Journal of Nutrigenetics and Nutrigenomics, 2011; 28;4(2):69-89.

Nutrigenetics and nutrigenomics hold much promise for providing better nutritional advice to the public generally, genetic subgroups and individuals. Because nutrigenetics and nutrigenomics require a deep understanding of nutrition, genetics and biochemistry and ever new 'omic' technologies, it is often difficult, even for educated professionals, to appreciate their relevance to the practice of preventive approaches for optimising health, delaying onset of disease and diminishing its severity. ILSI SEA Region in collaboration with CSIRO of Australia organized a Seminar & Workshop on Fundamentals of Nutrigenomics and Its Application in October 2009 in Thailand. The outcome of the meeting led to the writing of this review that discusses (i) the basic concepts, technical terms and technology involved in nutrigenetics and nutrigenomics; (ii) how this emerging knowledge can be applied to optimise health, prevent and treat diseases; (iii) how to read, understand and interpret nutrigenetic and nutrigenomic research results, and (iv) how this knowledge may potentially transform nutrition and dietetic practice, and the implications of such a transformation.

<http://content.karger.com/produktedb/produkte.asp?typ=fulltext&file=000327772>

Special Report: Seminar on Young Child Nutrition Improving Nutrition and Health Status of Young Children in Indonesia

Asia Pacific Journal of Clinical Nutrition, 2011; 20 (1):141-147.

ILSI SEA Region, in collaboration with Indonesian Pediatric Society (IDAI) held a Seminar on Young Child Nutrition: Improving Nutrition and Health Status of Young Children in Indonesia on November 12, 2009, in Jakarta. The seminar reviewed the current nutritional and health status of young children in Indonesia and identified key nutrient deficiencies affecting their optimal growth. The continuation of child growth from fetal stage is of paramount importance; and maternal and child health should be a central consideration in policy and strategy development. Clinical management of nutrient deficiency and malnutrition, as well as strategies and education to improve feeding practices of young Indonesian children were discussed in the seminar. Relevant experiences, approaches and strategies from France, New Zealand and Malaysia were also shared and followed with discussion on how regulatory systems can support the development of health policy for young children. This report highlights important information presented at the seminar.

http://apjcn.nhri.org.tw/server/APJCN/Volume20/vol20.1/abstracts.php#Seminar_on_young_child_nutrition:_i

Upcoming Activities

August – December 2011

Training Workshop on Nutrition and Health Claims Vietnam	August 8
Plenary Paper on the 'Role of Food Safety in Food Security' at the International Conference on Asian Food Security Singapore	August 10 -12
Seminar on Infant and Young Child Nutrition Thailand	September 13 - 14
Future Directions in Saturated Fats: Composition and Metabolism Australia	September 14
Seminar and Workshop on ASEAN Food Consumption Data and Exposure Assessment Malaysia	October 10-13

Symposium on Vitamin D Indonesia	November / December
Securing Community Health and Wellbeing through Multi-Sectorial Partnerships Australia	December 7 - 8
Training Workshop on Risk Assessment Thailand/Philippines	4 th Quarter
Workshop and Roundtable Session on Evaluation of New Ingredients Indonesia	4 th Quarter
2012	
Workshop on Assessment of Cognitive Function for Infants and Young Children Thailand/Singapore	February
6 th Asian Conference on Food and Nutrition Safety Singapore	4 th Quarter



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Visit us at www.ilsi.org to find out more about our upcoming activities and programs.

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