

## Role of Testing in Support of HACCP Regulations

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### <Summary>

HACCP is a food safety control system which was developed in the United States in the 1960s.

The Joint FAO/WHO Codex Alimentarius Commission published “HACCP system and guidelines for its application” in 1993 and thereafter this became the de-facto global standard.

Mandatory HACCP compliance for the all food operations has been in place for many years in Japan. Revisions such as to the associated Food Hygiene Law were considered and then revised on June 13th, 2018.

For implementing of HACCP system, CCP(s) are evaluated via parameters such as time, temperature, pH, and water activity. Therefore routine testing, especially microbiological testing is not frequently used.

However, the results of examinations and tests are indispensable for hazard control and verification of HACCP implementation.

This report introduces the HACCP system and related tests which play important roles in its planning and the verification of its effectiveness, as well as information about the US FDA and the NACMCF.

## Development and Application of Microbial Rapid Detection Technology in Food Industry

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### <Summary>

Numerous rapid detection methods for food microbiological analysis have been developed so far. The methods include rapid investigation system for environmental contamination, rapid microbial enumeration or estimation technology, and rapid detection system for food-borne pathogens. Those developed technologies can be used as selfinspection for food processing line in food companies. It is important to build the strategy for how to use the above rapid detection methods for the improvement of food hygiene environment. Consequently, it is necessary to collect and analyze daily test results. Thus, these data will be applicable to establish the self-inspection standard or to find a long term accumulation of microbial contamination. In this review, we summarize the rapid detection technology and example of its analysis as well as the growth prediction analysis of foodborne pathogen in food materials by rapid quantification technology.

## Current Status of Rapid Identification Method for Microorganisms Using MALDI-TOF MS and Practical Application at NITE

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### <Summary>

In the food industry, quality control of food product for protect food safety is a very important task. In addition, reduction to the consumers due to reduced manufacturing costs is also necessary. Recently, the microbial rapid identification method using matrix-assisted laser desorption / ionization time-of-flight mass spectrometer (MALDI-TOF MS) has attracted attention as a quality control method in a food production line, because the method is rapid, inexpensive, and simple as compared with the conventional microorganism identification method. In this report, we introduce the advantages and problems of this method from the user's point of view, including services from NITE.

< Research Institute of ILSI Japan Members >  
Research and Development Organization at Nissui

Shinya Yamashita, Ph.D.  
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<Summary>

During and after World War II, during Japan's economic boom, and during the 200 miles EEZ period, Nissui has continued transforming its business structure to respond to echanging times. In addition, Nissui recognizes the sustainability of marine resources and preservation of the earth's environment as important issues of our time.

One of the drivers which has supported the growth of Nissui is research and development which creates new value from marine resources. Nissui R&D is divided into five units (the Central Research Laboratory, the Food Safety Research Department, the Product Research & Development Department, the Technology Development Department, and the Food Function R&D Center) which cooperate and are continuously conducting research and development. Research areas of interest are wide-ranging: basic studies on marine food products; aquaculture and health fields; safety and quality assurance of our products; new product development of processed foods including frozen prepared foods and shelf-stable foods; improvement and enhancement of production efficiency; planning, studying and technical development of functional materials and functional foods.

The Tokyo Innovation Center was built in 2011, as part of Nissui's 100th Anniversary Project. This Center is designed to encourage synergy and discovery by integrating Nissui's research and development functions, and to serve as the center of R&D activities conducted by the Nissui Group worldwide.

Nissui also focuses on research and development for the future, with the aim of creating value and novel functions to benefit all consumers.

< Friends in ILSI >  
Congratulations! The 25th Anniversary of ILSI Southeast Asia Region

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On April 23-25, 2018, ILSI Southeast Asia Region commemorated its 25th anniversary during the branch's Annual General Meeting (AGM), held at the Grand Copthorne Waterfront Hotel in Singapore. Aside from the usual AGM Business Meeting, a series of the one day Science Symposium on "Translation Technologies and Translational Research" was held a day prior to the AGM Business Meeting; the 25th Anniversary Commemorative Program during the AGM Business Meeting proceedings; and the 25th Anniversary Reception during the evening of the first day. Apart from ILSI Southeast Asia Region members, scientific advisors and country committee coordinators, representatives from ILSI Focal Point in China, ILSI Europe, ILSI Japan, ILSI Korea, and ILSI Taiwan were also in attendance. A very special guest, Dr. Suzanne Harris who was the former Executive Director of ILSI Global, also joined the anniversary celebrations and made it especially memorable.

**1. Science Symposium on "Transformation Technologies and Translational Research"**

In a departure from more conventional food and nutrition topics, the ILSI Southeast Asia Region AGM Science Symposium held on April 23 explored several new and emerging cross-disciplinary technologies relevant to the food sector. Such technologies, if adopted within the food system, could have a profound impact in areas ranging from areas including food safety, nutrition and agriculture. The first speaker of the symposium was Dr. Ralph Graichen, Director for Food and Nutrition, A\*STAR, Singapore, who talked about "Smart data and food innovation – potential impact on public health solutions". Dr. Graichen described the recent advancement from "big data" to "smart data", as well as the application of such data within the food sector ranging from understanding consumer behavior to assisting the detection of food fraud within the food supply chain. The second presentation was provided by Emeritus Prof. Richard Head, University of South Australia, who discussed "An evolutionary perspective of nutritional and human health – from reductionism to systems approaches". Prof. Head described the historical progression in our current understanding of nutrition, which is based on the study of single nutrients and its relationship with health. He commented however that a new research paradigm is necessary to take into account the complexity of nutrient functions and interactions within the body. The third speaker was Dr. Chor San Khoo from ILSI North America, who shared about "Technology innovation: trends that are reshaping life science research and approaches to food and human health". One potentially revolutionary technology developed recently is the "organ-on-a-chip", which could be applied for toxicological testing of chemical substances in food. The fourth presentation on "Innovations in agriculture and food and implications for nutrition and precision health" was jointly presented by Prof. Lynne Cobiac and Dr. Christopher Downs from CSIRO, Australia. They provided some examples of food innovations developed by CSIRO to address nutrition challenges and sustainability. This was followed by Prof. Paul Teng, Nanyang Technological

University, Singapore, who talked about “New agricultural technologies for sustainable agri-food systems in ASEAN – challenges and opportunities”. Prof. Teng outlined the challenges facing ASEAN food security, as well as the disruptive technological innovations that could address them including digital information technologies and genetic biotechnology. The morning session was finished with a presentation by Ms. Zelda Anthony, IBM Singapore, on “Data science and analytics – blockchain and its application in the food supply chain”. Ms. Anthony provided a background on what is a blockchain and its usefulness for maintaining integrity and traceability within the food sector. The afternoon session resumed with a presentation by Prof. Christian Jeyakumar Henry, Singapore Institute of Clinical Sciences, A\*STAR, on the topic of “Harnessing emerging technologies in nutrition and biomedical science for public health improvement”. Prof. Henry called for the integration of food technology as part of the development of solutions to tackle human nutrition challenges. This was followed by a presentation by Prof. Barry Halliwell, National University of Singapore, who covered the topic on “Advances in Antioxidant Research: Translation from Bench to Applications”. The final two presentations covered new genetic technologies that could impact public health and food safety, which were respectively provided by Prof. Meng How Tan, Genome Institute of Singapore, A\*STAR, on “Potential of genome editing tools in agriculture, preventative health and disease – current and future” and Dr. Masami Takeuchi, Food and Agriculture Organization of the United Nations (FAO), on “Applications of next generation and whole genome sequencing – opportunities and challenges for food safety management”.

## 2. ILSI Southeast Asia Region AGM Business Meeting

The AGM Business Meeting began on April 24 with the Assembly of Members Meeting, which kicked off with the President’s Address by Mr. Geoffry Smith, President of ILSI Southeast Asia Region. Mr. Smith explained about the ongoing restructuring of ILSI at the global level, including the establishment of the ILSI Management Team and the reorganization of the Board of Trustees. A new ILSI Global Director of Operations and Director of Communications will also be recruited. Following this, Prof. Peter van Bladeren, current President of ILSI Global, then provided an update from ILSI Global via a recorded message. In addition to the Treasurer’s Report and Nominations Committee Report, it was also announced during the AGM Business Meeting that Dr. Rodolfo Florentino, who was the long-time ILSI Philippines Country Committee Coordinator, would be retiring and will be replaced by Dr. Celez Tanchoco.



Picture 1: Dr. Suzanne Harris receiving a small token of appreciation from Mr. Geoffry Smith, President of ILSI Southeast Asia Region

Following the Assembly of Members Meeting, the highlight of the day was the ILSI Southeast Asia Region 25th Anniversary Commemorative Program. Mrs. Boon Yee Yeong reviewed the history and milestones for the branch and shared some of the key moments through photographs of ILSI colleagues and friends who supported the branch over the years. In recognition of her invaluable contribution leading ILSI Global over many years, Dr. Su-

zanne Harris was also presented with a small token of appreciation.



Picture 2: The ILSI Southeast Asia Region Board of Directors posing with the 25th anniversary cake



Picture 3: Representatives from ILSI Philippines Country Committee led by Dr. Rodolfo Florentino (far left) performing at the 25th anniversary reception

After lunch, the proceedings for the day resumed with the Joint Board of Directors and Executive Committee meeting, followed by the Science Cluster meeting of the Sustainable Food Systems Science Cluster. The business proceedings of the day finished with the ILSI Southeast Asia Region Country Committee Meeting and Discussion.

While the serious matters for the day were concluded – the celebrations were just getting started with the 25th Anniversary Reception in the evening. During the reception, representatives from ILSI Southeast Asia Region Country Committees including Australasia, Indonesia, Malaysia, Philippines, Thailand and the ILSI Southeast Asia Region secretariat staff provided entertaining performances for the audience. The mood for the night was very festive and there was even a photo booth prepared for attendees to take photographs to remember the night.

The AGM Business Meeting was resumed on the following day with the meetings by the Food and Nutrients in Health and Disease; Nutrition and Food Guidance for Public Health; and Food Safety and Risk Assessment Science Clusters. The approach taken for the Science Cluster discussions differed from previous years, as the Cluster representatives were divided into two working groups and assigned 1-2 priority identified topics to formulate program plans and propose specific activities. This innovative approach generated many interesting, yet concrete proposals that could be followed up by the ILSI Southeast Asia Region secretariat.



Picture 4: ILSI Southeast Asia Region members, scientific advisors and invited guests from other ILSI branches

### **3. Conclusion**

As expected, it was once again a very successful and productive ILSI Southeast Asia Region Annual General Meeting. On behalf of ILSI Japan – congratulations to ILSI Southeast Asia Region for your 25th Anniversary!



## Report of the 50th Session of the Codex Committee on Food Additives

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### <Summary>

The CODEX Committee on Food Additives (CCFA) held its 50th Celebrate Session in Xiamen, China, from 26<sup>th</sup> to 30th March, 2018. More than 290 attendees were from 53 Member countries, European Union and 32 nongovernment international organizations.

The followings were the major agenda in this Session: (1) CODEX General Standard for Food Additives, (2) International Numbering System (INS) for Food Additives, (3) Proposal for additions and changes to the priority list of substances proposed for evaluation by JECFA, and (4) Alignment of the food additive provisions of commodity standards and relevant provisions of the GSFA. The Committee agreed to the 84th meeting of JECFA report which including Gum Ghatti safety evaluation as ADI not specified. Regarding benzoic acid, the extended one-generation reproductive toxicity study is in progress, so its ML in the GSFA will be maintained until 53<sup>rd</sup> CCFA

The next 51st Session would be scheduled in China from 25th to 29th March, 2019.