

Inaugural Asia-Pacific Symposium on Food Safety

A Joint Symposium by Southeast Asia Association for Food Protection (SEA AFP) and Asia Pacific Institute of Food Professionals (APIFP)

Introduction

Asia-Pacific faces diverse and specific nature of food challenge in food safety. To overcome this challenge, there is a strong need to develop more regional cooperation and collaborations.

This symposium covers:

Understanding regional challenges – Asia Pacific
Food safety challenges in Southeast Asia
Chemical adulterants and contaminants
Recent food safety research trend for food preservation and rapid detection

Speakers

Prof William Riley
Jinan University, China

Dr Paul Chiew
Agri-Food & Veterinary Authority of Singapore (AVA)

Prof Son Radu
Universiti Putra Malaysia, Malaysia

Prof Ratih Dewanti-Hariyadi
Bogor Agriculture University, Indonesia

Dr Malik Hussain
Lincoln University New Zealand

Mr Patrick Low
Covance (Asia) Pte. Ltd, Singapore

Dr Hyun-Gyun Yuk
National University of Singapore

Sponsored by:



Food Science & Technology Programme



Benefits to attendees?

This symposium is designed to create awareness about global food safety and challenges. A better understanding of regional food safety issues in global context.

Who should attend?

- Agriculturists;
- Analytical companies;
- Food manufacturers;
- Food testing laboratories;
- Food scientists and students;
- Food supply chain;
- Government authorities.

Date: 21 August (Friday), 2015

Time: 12:30 – 6:00 pm

Venue: S16, Level 3, LT 31,
National University of Singapore

Please register by 7 August 2015

<http://mysurvey.nus.edu.sg/EFM/se.a.shx?s=543BE5C2557634AB>

Further enquiries, please contact:

Ms Lee Si Min

Food Science and Technology
Programme, NUS

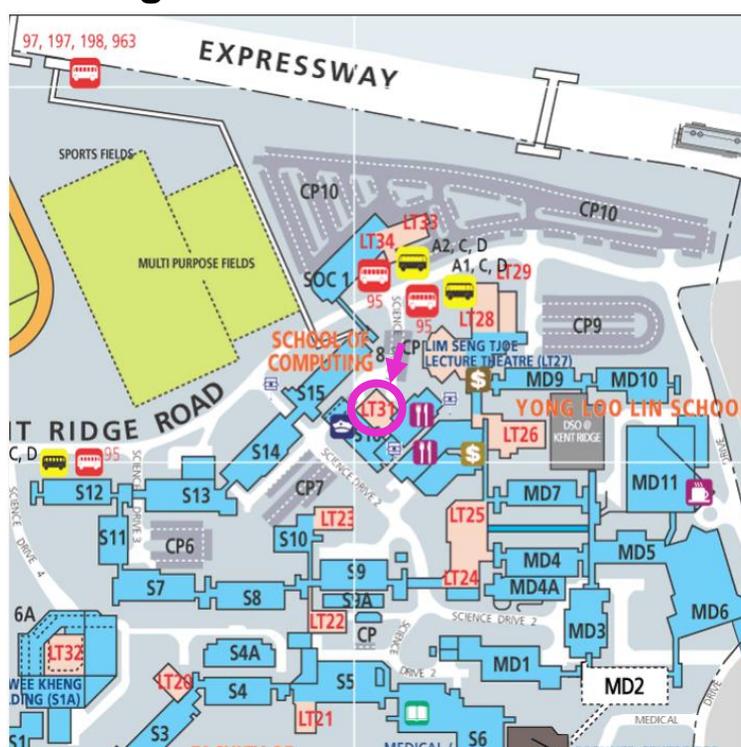
Email: chmlsm@nus.edu.sg

**Free Admission
Registration Required**

Symposium Program

12:30PM – 1:00PM	Registration and Exhibition
1:00PM – 1:10PM	Opening Remarks
1:10PM – 1:50PM	Food safety challenges from an industry perspective Prof William Riley
1:50PM – 2:20PM	Ensuring food safety in Singapore: Some perspectives Dr Paul Chiew
2:20PM – 2:50PM	Biosafety of <i>Vibrio parahaemolyticus</i> in shellfishes in Malaysia Prof Son Radu
2:50PM – 3:20PM	Developing microbiological criteria for food safety in Indonesia Prof Ratih Dewanti-Hariyadi
3:20PM – 4:00PM	Tea break and Exhibition
4:00PM – 4:30PM	Comparison of microbiological food safety challenges faced by food industry in Australia, New Zealand and Singapore Dr Malik Hussain
4:30PM – 5:00PM	Challenges in food safety from chemical adulterants and contaminants Mr Patrick Low
5:00PM – 5:30PM	Characterization, control and detection of foodborne pathogens Dr Hyun-Gyun Yuk
5:30PM – 6:00PM	Q & A

Getting to NUS LT31:



Self-Drive / Taxi:

- 1) Drive along Ayer Rajah Expressway (AYE) towards Jurong.
- 2) Take Exit 8 and go onto Lower Kent Ridge Road towards NUH (National University Hospital).
- 3) Turn left at Science Drive 1.
- 4) Alight at the foyer and take the lift or stairs to level 3 where LT 31 is.

Nearest MRT: Kent Ridge

Bus Service: 95, 97, 197, 198, 963

Food Safety Challenges from an Industry Perspective

Professor William W. Riley, Jinan University

From a food safety perspective, the food industry in its various forms (raw materials, beverages, primary processing, secondary processing) is both at risk and a potential source of risk to both its industry partners and the consuming public. It is this interrelationship that must be considered when addressing and mitigating the overall food safety risk faced within the food supply chain. While the public generally focuses on the potential hazards that directly enter its food supply, the primary and secondary processors are also at risk in this chain, as they are dependent on the integrity of their ingredient suppliers to provide raw materials that are both hazard-free and of the quality that they are purported to be. This becomes a function of the supplier itself, the strength and integrity of the government regulatory system, and the quality assurance system of the food processor. While experience has shown that some processing companies are the willing accomplices in deceptive practices, many are unwitting victims in adulteration or other violative food safety schemes. Similarly, where value-added processors experience a food safety hazard (e.g.-microbiological contamination), the challenge becomes how that company responds in the marketplace and how that response ultimately dictates the future of the company. History shows that, in general, the outcome for a company faced with a public food safety incident is often predicted by how forthcoming it is with the issue in the eyes of the consuming public and with the relevant government authorities.

Ensuring Food Safety in Singapore: Some Perspectives

Dr Paul Chiew, AVA

Increase in the prevalence of foodborne illness and food contamination in recent years has heightened awareness of global importance of food safety. This presentation will discuss the situation and the challenges in ensuring food safety as well as discuss the strategies to ensuring food safety in Singapore.

Biosafety of *Vibrio parahaemolyticus* in shellfishes in Malaysia

Professor Son Radu, Universiti Putra Malaysia

Consumption of raw or undercooked seafood contaminated with *V. parahaemolyticus* may cause acute gastroenteritis leading to diarrhea, nausea, vomiting, abdominal cramps and fever to an individual. This study aimed to determine the prevalence and number of *V. parahaemolyticus* at the retail level, likewise, to estimate the risk of acquiring vibriosis from consumption using a stochastic risk model. Out of 232 samples examined, 229 (98.7%) were positive for *V. parahaemolyticus* with counts ranging from 30 to >110, 000 MPN/g. Positive samples for tdh+ *V. parahaemolyticus* were obtained in 77 out of 232 (33.1%) samples ranging from 30 to >110, 000 MPN/g. Meanwhile, positive samples for trh+ were identified in 16 out of 232 (6.9%) samples examined ranging from 30 to 9,600 MPN/g. The risk framework was established based on the currently available experimental and survey data in combination with the @RISK software to simulate the uncertainties based on the Monte Carlo simulation. The model framework was characterized into three stages, notably the purchasing, exposure assessment and finally the risk characterization of the local consumers. Particularly, the model accounted the bacterial growth at all stages relative to the storage temperature and time, followed by an event of heat-treatment prior to consumption. This study estimated a mean of 4.26E-4/person/daily/undercooked meal.

Developing microbiological criteria for food safety in Indonesia ***Professor Ratih Dewanti-Hariyadi, Bogor Agricultural University***

The Indonesian food microbiological limit established by the National Agency for Drug and Food Control (NADFC) is a compulsory requirement for the registration and distribution of foods in the country. This standard is generally adopted for food commodity standards developed by the National Standardization Body with all stakeholders. The current microbiological limit for foods was announced in 2009 and during the implementation several issues have surfaced such as stringency, relevance or practicality. In 2014, a review of the standard was initiated to accommodate the problems and also to adopt the Codex Alimentarius Commission concept on microbiological criteria. The review was initiated by the NADFC with the assistance of an expert panel and involvement of the stakeholders. The review also took into consideration other standards from other countries. Using the International Commission on Microbiological Specification (ICMSF) cases and worksheet, data obtained from industries, inspection data by NADFC, registration data in NADFC and the Indonesian Food Category as references, revised microbiological criteria are now in progress. The new criteria will contain sampling plans and reference methods thus it is expected to improve confidence in food safety.

Comparison of microbiological food safety challenges faced by food industry in Australia, New Zealand and Singapore ***Dr Malik Altaf Hussain, Lincoln University***

Microbiological foodborne diseases are a common and growing public health and economic problem worldwide. Microbial contamination of foods can occur at any stage during food supply chain. It is not unusual for food products to have certain number of microorganisms present in or on them. However, existence of some serious pathogenic bacteria such as *Salmonella*, *Campylobacter*, *E. coli* O157:H7 and *Listeria monocytogenes* pose higher degree of threat to the consumers. Each food product must meet microbiological criteria set by the regulatory authorities in a specific region or country. It is important to understand that each pathogen differ from others in its ability to cause a disease and the severity of the illness. Moreover, association and prevalence of specific pathogenic bacteria in food products change with geographic region. For instance; salmonellosis (eggs and egg-products) in Australia, campylobacteriosis (poultry products) in New Zealand, and nontyphoidal salmonellosis in Singapore present typical nature of regional food safety challenges. This presentation will discuss and compare microbiological food safety challenges faced by the food industry in these countries.

Challenges in food safety from chemical adulterants and contaminants

Mr Patrick Low, Covance Laboratories

Chemical contaminants and adulterants may occur in food and dietary supplements from various sources such as from the use of agrochemicals, environmental pollution, cross-contamination or formation during processing, migration from food packaging materials, contamination from mycotoxins and other natural toxins, or use of unapproved additives and other (mostly economically motivated) adulterants. Many of these chemicals pose a health concern resulting in strict regulations. Hence, analysis of these contaminants and adulterants is very often an essential part of food safety testing programs to ensure consumer safety, compliance with regulatory limits and brand protection. Most of the current techniques for contaminant testing involved state-of-art instruments designed to meet the required regulatory limits and to minimize false results. These techniques are usually targeted in nature and are thus effective in monitoring the known contaminants. However, they are somewhat limited especially in the area of adulterant testing where for example structural modification can be made to an active illegal chemical component to “mask” the compound under targeted analysis. AR/HR-MS is one potential technique that can provide a non-targeted approach of analysis to combat such issues.

Characterization, control and detection of foodborne pathogens

Dr Hyun-Gyun Yuk, NUS

Food safety is a global issue that directly affects hundreds of millions of people. The World Health Organization (WHO) calls it "one of the most widespread health problems and an important cause of reduced economic productivity". The United States Centers for Disease Control and Prevention (CDC) estimates that each year roughly 1 in 6 Americans (or 48 million people) gets sick, 128,000 are hospitalized, and 3,000 die of foodborne diseases. As such, annual medical costs/productivity losses due to foodborne illnesses range from \$6.6 billion to \$37.1 billion. Thus, food safety is a timely and urgent research topic. Although many efforts have been made in reducing foodborne outbreaks worldwide, the number of outbreaks is still increasing. To minimize the risk of foodborne disease three research areas have been suggested. Firstly, we need to understand bacterial behavior during food processing and storage. Secondly, effective control measures must be developed and successfully implemented into the food supply chain. Lastly, rapid and accurate detection protocols must be established. Thus, in this presentation, several research projects related to these three areas will be introduced and the recent research outcomes will be shared.