Report of recent events

2nd Regional Training Course “Establishment and Application of Microbiological Criteria” Hanoi, Vietnam, 16 November 2013

The second regional training course “Establishment and Application of Microbiological Criteria” was held on 16th November 2013 in JW Marriott, Hanoi, Vietnam. The main objective of the training course was to enhance the knowledge of microbiological criteria and capacity for establishment and application of the same. The specific objectives included:

1) To understand the basic principles behind the establishment of microbiological criteria
2) To understand the different approaches for the establishment of microbiological criteria according to their intended use
3) To understand the relationship between microbiological criteria and other microbiological risk management metrics
4) To learn about the practical application of microbiological criteria in Codex standards setting process.
Codex revised Principles and Guidelines for the Establishment and Application of Microbiological Criteria for Foods were adopted in July 2013 at the 36th Session of the Codex Alimentarius Commission (CAC) based on recommendations of Codex Committee on Food Hygiene (CCFH) after long and intensive discussions on the changes. The training course was held back-to-back with the 45th meeting of the CCFH which was held from 11-15 November 2013.

The training methodology included lectures and group exercises. The training course was attended 40 participants including participants from ASEAN countries, as well as from Cape Verde, Ireland, Japan, Nigeria, Santa Lucia, Senegal and FAO and WHO officials.

The participants enhanced their understanding of the main aspects of the revised Codex principles and guidelines on application of microbiological criteria (MC). Participants learned the statistical methodology applicable to microbiological Criteria and associated sampling and testing techniques. Through the group exercises, participants were able to get practical experience on establishing and applying microbiological criteria as well as the relation between MC and other metrics such as Food Safety Objectives (FSO), Performance Objectives (PO) and Performance Criterion (PC).

Opening session

The programme started with a brief introduction by Mr. Atsuhiro Meno, Project coordinator FAORAP. He expressed gratitude to the Government of Japan, donor country and Government of Vietnam, host country. This was followed by an address by Ms. Shashi Sareen, Senior Food Safety & Nutrition Officer, FAORAP who explained the important role of application of Microbiological criteria related to foods namely for verifying that food safety control systems are implemented correctly and the background behind the revision of Codex principles and guidelines related to these aspects. Further she emphasized importance of microbiological risk control. In addition she also highlighted FAO’s activities for supporting Codex standard setting implementing international and national standard as well as actual projects and activities being operated in the region.

Mr. Atsuki Tomoyose, Second Secretary, Embassy of Japan expressed his gratitude to both the organizers and participants. He emphasized the importance of food safety as an urgent issue in accordance with greater economic integration, especially for ASEAN countries which set the goal of regional economic integration by 2015. He stressed that Japan would continue to support the growth of
ASEAN countries and extend the “heart to heart” relationship as this year marks the 40th anniversary of ASEAN-Japan Friendship and Cooperation.

Mr. Tran Quang Trung, General Director of Vietnam Food Administration, felt that it was a privilege for Vietnam to become a host country for the training course organized by FAO’s Regional Office for Asia and the Pacific as well as the 45th Session Codex Committee on Food Hygiene. He emphasized on the priority of establishing a system of food safety standards and regulations harmonized with international and regional standards with active co-operation amongst ASEAN countries.

**Introduction to microbiological criteria - the basics**

Dr. Jens Kirk Andersen shared with participants the Danish experience on food safety control. He introduced the revised version of Principle and Guideline for establishment and application of microbiological criteria related to foods. He explained about the preventive approach and requirements of MC and also the relation with Risk analysis in which MC could be set as a risk management task.

Dr. Andersen further explained about specification of MC as enunciated in the Codex guideline of 2013 and its 8 components. He presented 3 steps to reach the goal of setting up MC to reduce the risk of the consumer from microbes. To answer the question of how to implement a risk based approach, Dr. Andersen gave definitions of Appropriate Level of Protection (ALOP), FSO, PC and Process criteria (PrC) and explained how to apply those in developing food safety standards. He emphasized that the transition from PO to MC has proven to be very difficult. Dr. Andersen further mentioned about the sampling strategy and effect of choosing the wrong sample site which could end in the possibility of not detecting a contaminated lot.

**The revised Codex principles and guidelines (CAC/GL 21 – 1997)**

Dr. Hajime Toyofuku explained the background, scope of the revision, the purposes of the revision, and major changes and newly added key elements and the implications of the same.
In addition, the new sections of “moving window approach” and “trend analysis”, that are elaborated from the experiences gained during the preparation of the practical examples were presented for the application in food industry.

Dr. Toyofuku spent time to explain about general principles, five purposes of MC and relationship between MC, ALOP and other Microbiological Risk Management (MRM) metrics of the revised version. He also explained the role of analytical methods, statistical performance, trend analysis in setting the MC.

He emphasized that the effective implementation of control measures offer more advantages than sole reliance on microbiological testing through acceptance sampling of individual lots of the final product to be placed on the market. However, the establishment of MC may be appropriate for verifying that food safety control systems or parts of them are implemented correctly.

An introduction to the statistics behind Microbiological criteria and associated sampling and testing

Dr. Tom Ross during his presentation focused on attributes sampling plans, statistics of sampling plans, limitations of testing, other complications and sources of advise on sampling and sampling plan design. He explained that attributes plans tell what proportion of the units in the lot meet specified criterion.

In order to explain about statistic sampling plan, Dr. Ross showed some animation pictures and raised questions and also gave an explanation of mathematical quotation to calculate Probability of Detection.

Dr. Ross highlighted the limitations of the testing and introduced to participants some friendly useful tools to set up sampling plans. He concluded his talk by emphasizing that a transparent, science-based criteria and sampling plans need to be developed and their performance compared based on knowledge of the Standard Deviation (SD) of contamination within a lot.
Examples of Microbiological Criteria, 1: Microbiological Criterion for verifying the performance of a food safety control system

Dr. Judi Lee presented an example on how MC could contribute to verifying the Campylobacteria contamination control system. She briefly introduced about the situation of campylobacteriosis in New Zealand and other countries, and how they design the project.

She also spent time to explain about “moving window’ applied in her sampling plan, the target at 90th percentile 3.78log10 CFU/ carcass gave multiple positive outcomes, improved standards of dressing of broiler chicken in New Zealand and assisted in meeting a significant reduction in human campilobacteriosis cases over 5 years.

Examples of Microbiological Criteria, 2: Operationalising a Performance Objective with a Microbiological Criterion for a Risk-Based Approach

In his second presentation, Dr. Ross discussed about risk assessment and risk management in relation to microbiological criteria. He also explained about The International Commission on Microbiological Specifications for Foods (ICMSF) equation related to FSO, initial level of the hazards, total increase, total reduction indicators on relation with setting performance objective and control options in the food chain.

Dr. Ross introduced the document on “Operationalising a performance objective with microbiological criterion for a risk based approach”. He stressed on the definition of performance objective as the maximum frequency and/or concentration of a hazard in a food at a specified step in the food chain before the time of consumption that provides contributes to a FSO or ALOP, as applicable.

Dr. Ross also explained the role of competent authority which develop health target ( e.g. ALOP) or a FSO, and other food related sectors such as food business operators which establish and apply the PO on the basis of FSO set by competent authority or an evaluation of a hazard in the part of the food supply chain for which they are responsible. A PO can be established at any point in a food supply chain.
Group exercise

The afternoon session was devoted to group exercises. All participants and observers were divided into 7 groups and were asked to do group exercise following a case study which was assigned for their group. Each group received the guidelines and assistance from facilitator and advisors of the faculty.

Dr. Toyofuku and Dr. Ross introduced some useful webpages where participants could observe bacteria growth curve and NEW sampleplan2 excel file which could be used for MC setting up.

Each group worked on data stimulation using the software; Seafood Spoilage and Safety Predictor (SSSP) downloaded from National Institute of Aquatic Resources, Technical University of Denmark.

Closing session

Ms. Shashi Sareen during the closing session presented the evaluation of the feedback Many participants positively evaluated the quality of faculty and result of the training course. Several participants pointed out that the time allotted for the programme was less and they were not very familiar with the examples or case study such as smoked salmon. Registered participants from ASEAN countries were given certificate of the training course.

Note: The summary of each presentation as given above has been prepared by the secretariat of the project. The presented material and related documents are available at project webpage; http://foodsafetyasiapacific.net/documents-and-presentation-of-2nd-training-course/

Contact Mr. Atsuhiro Meno, Regional Project Coordinator (atsuhiro.meno@fao.org) or Ms Luisa Kosaisaevee, secretary of the project (luisa.kosaisaevee@fao.org) for further information.
Website of the project has been improved and launched operation as user friendly

After more than three months of renovation work, the newly developed webpage operation was launched since middle of November, 2013, just before the 2nd regional training course in Hanoi. Information of the recent training course was uploaded during and after the training course for not only for the benefit of trainees but also others who were interested in the training subject.

The website provides information of current and forthcoming activities of the project, such as workshops and training courses as well as publications of the project. It is also providing information of the former food safety project “Enhancing food safety by strengthening food inspection systems in the ASEAN countries” (GCP/RAS/222/JPN) such as reports of the workshops and training courses as well as guidelines developed.

The website also provides useful information such as list of contact person and national focal points of the project. It also provides links to related important websites.

Please visit our new website; http://foodssafetyasiapacific.net/
We would appreciate your kind feedback for improving our website.

Forthcoming events

Preliminary survey on edible insects will be started in near future

The project has been taken up to support Laos and other countries in the region to collect data for CCASIA to support a proposal for development of a standard on crickets and their products. With assistance of experts on edible insects at the Institute of Nutrition, Mahidol University, Bangkok a design of survey and data collection on edible insects in the region is being developed as a first case study of the project for contributing regional Codex standard setting. After the completion of the
consultation with the institute, a formative research by in-depth interview and observation of production and distribution on cricket in central and north-eastern Thailand for identifying current situation of production and distribution of edible cricket and formulating further survey with questionnaire will be developed and will also be used in other countries for data collection. Information obtained in the preliminary study will be published in a future issue of the newsletter.

**National training course in Cambodia will be conducted in February 2014**

The project is now discussing with the national focal point of Cambodia for preparing a national training workshop which will focus on capacity development of Codex standard setting and implementation. The concept and agenda of the workshop is now under discussion by the project authorities and national counterpart in Cambodia. The workshop will be held in February 2014 and invitation of participants will be started soon.

**From Project Team**

The project would like to express special gratitude to Vietnamese Government for hosting and supporting the 2nd regional training course in Hanoi 16 November 2013. Thanks to generous support of the national focal point of Vietnamese government, the training course could be completed successfully. Also we would like to express special thanks to all participants and resource persons to the training as well as observers from all over the world.

Please visit our newly renovated webpage [http://foodsafetyasiapacific.net/](http://foodsafetyasiapacific.net/). Your comments and feedback for improving information and function of the website are always welcome! It is hoped that the project will make further progress with the active cooperation of the countries of the ASEAN region.

Project Team

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Readers are welcome to provide their feedback on the newsletter.  
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