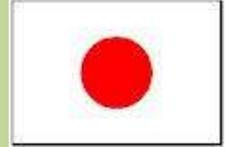




FOOD SAFETY STANDARDS IN ASEAN COUNTRIES



Newsletter of the Project
“Support to Capacity Building and Implementation of International
Food Safety Standards in ASEAN Countries”
(GCP/RAS/280/JPN)

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Report of recent events of the project

3rd regional Training Workshop on “Design and Evaluation of Mycotoxin Sampling Protocols” Manila, Philippines 11-12 September 2014,

The third regional training workshop of the project “**Design and Evaluation of Mycotoxin Sampling Protocols**” was held in Metropolitan Manila, Philippines 11-12 September 2014.

The training was attended by twenty participants from ASEAN country (two participants from each ten ASEAN countries), resource persons and staff of Bureau of Agriculture and Fisheries Standards (BAFS), Department of Agriculture of Philippines and FAORAP. Besides the participants mentioned above, twelve observers from Philippines, two observers from Japan and one observer from India attended at the training workshop.



The training course was organized to enhance a clear understanding and capacity for proper use the Mycotoxin Sampling Protocols with the following specific objectives:

- 1) To understand the role of sampling and testing in modern food control
- 2) To understand the definition of sampling protocol and theory of sampling
- 3) To understand the specific challenges related to mycotoxins sampling in food commodities
- 4) To understand functions and features of FAO mycotoxin sampling tool
- 5) To enhance the capacity to use the tool through hands on training using practical examples
- 6) To understand the possibility of future application of the tool

The training workshop methodology consisted of lectures, practice on using the tool including hands-on training with practical examples.

Opening session and Introduction

The welcome and introductory remarks were provided by Mr. Atsuhiko Meno of FAORAP. He explained project activities including result of previous workshops and training courses and clarified objectives and background of the training workshop after expressed his appreciation to generous contribution of BAFS, Department of Agriculture of Philippines for organizing the workshop.



Mr. Segfredo R. Serrano, Undersecretary for Policy and Regulations, gave the welcome address through emphasis on various food safety concerns as well as the significance of food in providing nourishment and nurture to the human body while Dr. Rubina O. Cresencio, Director of Bureau of Animal Industry, delivered welcome message as citing implementation of mycotoxin control program in Department of Agriculture and expectation of result of the training workshop.

Mr. Meno explained the components and schedule of the two-day programme and asked all participants to make a brief self-introduction before the lecture sessions.

Mycotoxins sampling in food commodities

Mr. Andrew Slate, Research professional, North Carolina Slate University, USA, started the technical session of the training workshop through elucidation of challenges being encountered in detecting mycotoxin concentration in a certain commodity involving both the seller and buyer. He mentioned that variability linked in mycotoxin test procedure could lead to two types of lots misclassification: a) possible rejection of good lots; called seller's risk and b) possible acceptance of bad lots; called buyer's risk. Mr. Slate demonstrated that in order to determine whether a certain lot will pass the standard set

for mycotoxin level, a lot sample should be taken wherein its mycotoxin level will be compared to the established standard. He highlighted also the importance of sampling protocol establishment as the commonly obtained varying values of test results could be greatly affected by the said protocol.

The following are said to be included in the plan elements:
a) test procedure including laboratory sample, sample preparation and analytical method; and b) accept/reject limit. In his discussion, he iterated that biases should be avoided particularly in sample collection as the latter is considered to be a large source of testing variability. He suggested that this could be done through representative sampling in a random selection process, ensuring that every kernel has an equal chance of being chosen.



Mr. Slate emphasized comminuted laboratory sample should be homogenous in order to obtain representative test portion reducing variability on the outcome. He concluded that several moves could be carried out in order to reduce uncertainty on values computed such as increasing sample size, finer grind and increase test portion size, increase number of measurements and improvement of technology.



FAO Mycotoxin Sampling Tool

In the next part of the technical session, Mr. Slate presented the FAO Mycotoxin Sampling Tool and guided the participants in using the said tool. He also demonstrated methods that can be applied in sampling plan design parameters in order to reduce risks associated with it. In conclusion he explained that a sampling design is a compromise between cost and risk.

Food Safety monitoring and surveillance

Dr Frans Vertraete, European Commission shared practices and principles regulating mycotoxins in feed and food through a video conference call.

He informed the participants that principles and requirements regarding regulating mycotoxins follows a “farm to fork” approach where all stages of the production, processing and distribution of food and also feed produced being fed to food producing animals are covered. He stressed that a high level of protection for human and animal health has to be pursued since free movement of food compliant to EU legislation is being practiced.



International standards are being used as references as well as the principle of risk analysis where interconnected components are risk assessment, risk management and risk communication. Furthermore, EU has a precautionary principle that provides provisional risk management measures on identified possible harmful effects on health that has scientific uncertainty, pending further scientific information needed for a more comprehensive risk assessment.

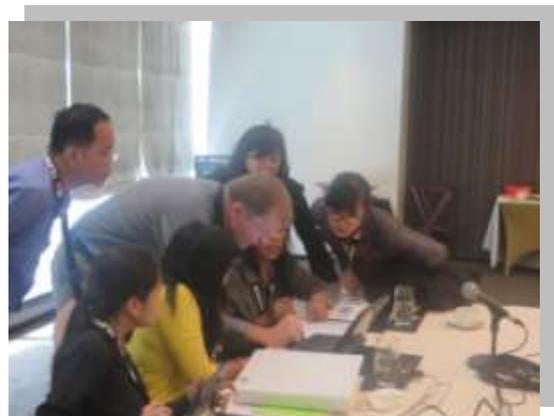
Dr. Verstraete continued his discussion by enumerating several challenges encountered in the enforcement of feed and food mycotoxins regulations that includes: a) development of adequate sampling procedures that are representative and feasible with heterogenous aggregates for large size batches and sampling uncertainty are being estimated b) measurement of uncertainty on the confirmatory and screening methods of analyses. Along this line, he also indicated that three values are being used as maximum levels, guidance values and indicative values in EU.

In order to help the participants better understand the sampling strategy, Dr. Verstraete gave several sampling procedures including sample collection, sample preparation and laboratory analysis. He added that non-compliance of consignment is considered if analytical result, corrected for recovery exceeds the maximum level taking into account the measurement uncertainty.

Dr. Verstraete explained the Rapid Alert System for Food and Feed (RASFF). He told the participants that RASFF findings help serve as driving force for new legislation in EU as this acts as basis for safeguard measures and frequency of inspections. He explained that effectiveness of the enforcement of legislation and regulations regarding sampling and analysis is ensured through a plan-do-check-act cycle.

Using the Tool and Practical Examples

For better appreciation and understanding of FAO Mycotoxin Tool, Dr. Slate provided several examples for the participants. In his presentation, he briefly mentioned several aflatoxin studies conducted based on risk categories, sorting efficiency, sampling statistics and market model. After this, he gave series of practical exercises to the participants in order for them to be familiar with the use of the said tool. He further highlighted that the effect of sample size in a sampling plan is very significant and adjusting its size may greatly affect the probability of having favorable results



Closing session



During the concluding session Mr. Meno presented the evaluation of the feedback. Many participants positively evaluated the quality of faculty and result of the training course. Some participants pointed out that additional time should have been allotted for the hands-on training with actual examples but as questionnaires were collected before hands-on training session of afternoon of last day and it was felt that there might have been different views after the hands-on session.

Mr. Slate replied some technical queries described in questionnaires such as sampling plan for small packages or other microbial aspects.

Mr. Meno expressed his intention to share useful information raised during the training including request for new mycotoxin and commodity combination and technical bug in the system with officials in headquarters.

Registered participants from ASEAN countries were given certificate of the training course.

Information on the training workshop such as agenda, presentation documents and photos have been uploaded in the project webpage;

<http://foodsafetyasiapacific.net/training-workshop-design-and-evaluation-of-mycotoxin-sampling-protocols-will-be-held-in-philippines/>

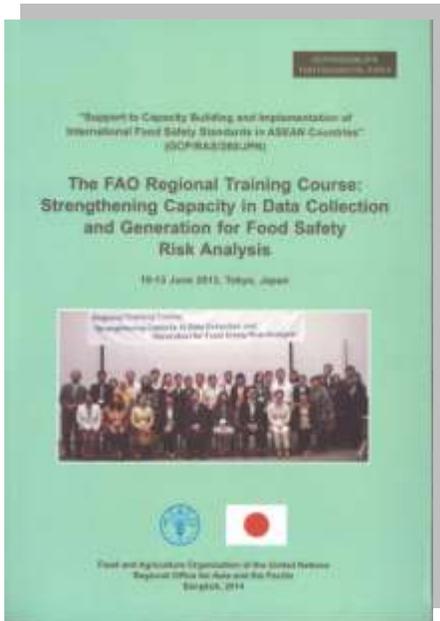
Information on Mycotoxin Sampling Tool developed by FAO, is also available on this web site;

www.fstools.org/mycotoxins/

Please 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.

Report of the Regional Training Course: “ Strengthening Capacity in Data Collection and Generation for Food Safety Risk Analysis” has been published

The report of the Regional Training Course: “Strengthening Capacity in Data Collection and Generation for Food Safety Risk Analysis” which as held 10–13 June 2013, Tokyo, Japan has been published and sent to all participants in September 2014.



The main contents of the report is;

- 1) Overview of risk analysis
- 2) Risk assessment of contaminants by JECFA
- 3) Risk assessment of pesticide residues by JMPR
- 4) Exposure assessment of contaminants by JECFA and exposure assessment of pesticide residues by JMPR
- 5) Contaminant occurrence data in ASEAN countries
 - 5.1) Generation and use of consumption data of Thailand
 - 5.2) Current situation of exposure assessment in the Philippines
- 6) Data analysis including basic statistics
- 7) Data analysis and generation of pesticide residues in Philippine
- 8) General aspects of sampling and the specified plan and procedure for aflatoxin
- 9) Quality assurance of monitoring/surveillance data chemical analysis of contaminants in food
- 10) Quality assurance - the case of Viet Nam and the way

forwards

- 11) Chemical risk assessment related to Codex standards
- 12) Active participation in Codex standards setting process and recent topics of standards setting in Codex
- 13) Visit to the Japan Food Research Laboratories

The report is also now available on the project website;

<http://foodsafetyasiapacific.net/report-of-the-training-course-strengthening-capacity-in-data-collection-and-generation-for-food-safety-risk-analysis/>

Ongoing activity



A survey on edible insects in Thailand

The Institute of Nutrition, Mahidol University has operated a survey on “House cricket farming and chain of distribution to consumers: Preliminary identification of the quality and safety and critical points of hazard of the produces” as a first case study of the project. The summarized result are as follows.

The survey was conducted on 90 cricket farmers (20 in-

depth interview and 70 data collection by questionnaires) and 10 cricket collectors in 10 provinces of Thailand (East: Chachoengsao, Prachin Buri, and Sa Kaeo; Northeast: Nakhon Ratchasima, Maha Sarakham and Khon Kaen; North: Chiang Mai, Lamphun, Lampang, and Phrae.) Three strains of crickets were reared in studied areas. These include *Acheta domesticus* (Thai common name 'Sading or Jingreed Khao'), *Gryllus bimaculatus* (Thai common name 'Thongdum or Jingreedtoong') and *Gryllus testaceus* (Thai common name 'Thongdaeng or JingreedBaan').

The size of cricket houses ranged widely from 3 to 2,400 m² with median value 74.5 m². 58% of farms fell into the size of 100 m² or less, and total wells hold by each farm ranged from 1 to 83 wells. 54% of the farms had 1-10 wells. The farms with 11-20 wells and more than 20 wells existed as 20% and 26% respectively.

Farmers followed three period of feeding; a nursery period (ages below 14 days) with feeding fine in texture added high protein feed, and 43% of farmers supplemented nutrients (vitamin, mineral powder, etc) during ages 7 to 14 days. In the second period of life (15 to 30 days), farmers give the same feed but protein level was reduced. And the third period (30 days onward) was based on the mating behaviors (35 to 40 day for Sading, around 30 days for Thongdum & Thongdaeng strains) and few days after mating, farmers collect eggs, and harvest accordingly. 2 to 5 days before harvesting, the farmers feed pumpkin for controlling undesirable smell and giving good weight.



Average yield density of the cricket harvested is estimated 10 kg/m³, farmers harvested Sading; 3 kg to 800 kg per harvest with median value of 90 kg (n=55) and Thongdum/Thongdaeng; 5 to 504 kg with median of 100 kg (n=57).

Median farm price for Sading is (east = 100 Baht, northeast = 90 and north = 140 Baht/kg) with 60 Baht/kg to 400 with median value of 100 Baht/kg, The highest price of 400 Baht/kg was observed in the north where some farmers sold fried crickets in wet market.

For Thongdum/Thongdaeng, median farm price; east and northeast =110 and north = 200 Baht/kg and from 90 to 350 Baht/kg with median value 120 Baht/kg

Farmers income for Sading is 9,500 baht/month. (n=53 farms) and Thongdum/Thongdaeng is 14,700 Baht/month (n=58 farms) respectively and profit is estimated at roughly 47% to 70%.

As a result of survey, many farmers recognized the constraints for cricket farming as wave of heat, cold climate and unknown infectious disease affecting crickets aged 30-35 days and lack of technical knowledge and appropriate farming management.

The recognized risks to safe produces synthesized from research findings are as follows;

- 1) Inbreeding practice commonly exists in the cricket farming context.
- 2) Hygiene and sanitation of housing and facility seem to get ignored. Type of sanitizer and its dilution were uncertain and inconsistent.
- 3) The quality of feed and water were uncertain.
- 4) Nutrient supplementation in either feed or water led to uncertain productivity and return since a trail manner indicated lack of confidence in skill of the farmer.
- 5) Lack of technical knowledge was believed to be rooted in undesirable farming practice and skills.



Gaps of knowledge include;

- a) Effects of inbreeding to health and nutritional value of the crickets;
- b) Effect of feeds of different formula used by the cricket farmers. In addition, formulation of the cricket feeds using locally available ingredient;
- c) Behavioral model of cricket farming with hygienic and sanitary concerns;
- d) Development of practical guide for cricket farming using appropriate technology that can be accessed by small farmers.

More details of summary of the result is available on

<http://foodsafetyasiapacific.net/wp-content/uploads/2014/09/Abstract-insect-servey.pdf>

The report of the survey will be published in due course.

Forthcoming events

The 19th Session of the CCASIA

The 19th Session of the CCASIA will be held in IINO Conference Center, Tokyo from 1 to 7 November 2014.

Please find more information at www.maff.go.jp/e/ccasia

The project will host a side event “Enhancement of Capacity on Codex Standards in ASEAN Countries” at lunch time on 5 November 2014 during which the outcome of the project over the last

3 years will be reported and the needs/concerns from ASEAN countries as well as other member countries for the future activities will be identified.

A FAO/WHO Regional workshop on "Food recall/traceability within the risk analysis frame work - Prevention of Food Safety Emergencies" will be organized on 2 November 2014 for CTF eligible country participants. Invitations have already been sent to eligible countries. For further details you may contact Ms Shashi Sareen, Senior Food Safety and Nutrition officer, FAORAP at shashi.sareen@fao.org.

From Project Team

The project would like to express special gratitude to Philippines Government for hosting the 3rd regional training workshop on "Design and Evaluation of Mycotoxin Sampling Protocols", which was held in Metropolitan Manila, Philippines 11-12 September 2014. The project was able to operate a training workshop successfully through prominent faculties with attendance of participants having significant knowledge of mycotoxins and microbiological risk assessment particularly data sampling and collecting.

The back issues of this newsletter are available at the newsletters page of the project webpage; <http://foodsafetyasiapacific.net/news/>

Also for a reader who wishes to register as a subscriber, registration is possible through this same page.

The project welcomes all of you visit our webpage <http://foodsafetyasiapacific.net/>

Project Team

*Readers are welcome to provide their feedback on the newsletter.
Please contact Project Coordinator; Atsuhiko MENO (Mr.) e-mail: Atsuhiko.meno@fao.org*