Annual International Training Course 2014

Course Title: Food Security Postharvest, Processing and Quality Assurance of Selected Agro-Industrial Products

Duration: August 19 – September 17, 2014
Closing Date for Applications: June 20, 2014

Background and Rational

Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for their active and healthy lives (World Food Summit, 1996). The multi-dimensional nature of food security includes food availability, access, utilization and stability.

Food utilization: Utilization of food emerges through adequate diet, clean water, sanitation and health care to reach a state of nutritional well-being where all physiological needs are met. This brings out the importance of non-food inputs to food security.

Food stability: In order for food to be secured, population, households or individuals must have access to adequate food at all times. They should not take risks with loosing access to food as a consequence of sudden shocks, an economic or climatic crisis, or cyclical events, seasonal food insecurity. The concept of stability can therefore refer to both availability and access dimensions of food security. Unfortunately, quite numbers of population in developing countries are facing the stage of food insecurity. In order to achieve success, strategies to eliminate food insecurity have to tackle these underlying causes by combining the efforts of those who work in diverse sectors such as agriculture, nutrition, health, education, social welfare, economics, public works and the environment. At the national level, this means that different ministries or departments need to combine their complementary skills and efforts in order to design and implement integrated cross-sectored initiatives which must interact and be coordinated at the policy level. At the international level, a range of specialized agencies and development organizations must work together as partners in a common effort.

Farmers and food sellers have been concerned about losses since agriculture has begun. Yet the problem of how much food is lost after harvesting to processing, spoilage, insects and rodents, or to other factors takes on greater importance as world food demand grows. Cutting postharvest losses could, presumably, add up a sizable quantity to the global food supplies; thus reducing the need to intensify production in the future. Postharvest technology plays an important role in maintaining quality (appearance, texture, flavor and nutritive value), protecting food safety, and reduce losses (both physical and in market value) between harvest and consumption. Simple, low cost postharvest technologies can often be more appropriate for small volumes, limited resource commercial operations, farmers involved in direct marketing, as well as suppliers to exporters in developing countries.

Food preservation is the process of treating and handling food to stop or slow down spoilage such as loss of quality, edibility or nutritional value. Preservation usually involves preventing the growth of bacteria, yeasts, fungi, and other micro-organisms. Food preservation also includes processes which inhibit natural discoloration that can occur during food preparation, such as the enzymatic browning reaction in apples after they are cut. Many processes designed to preserve food involve a number of food preservation methods. Maintaining or creating nutritional value, texture and flavor is an important aspect of food preservation, although, historically, some methods drastically altered the character of the food being preserved. In many cases these changes have now come to be seen as desirable qualities such as cheese, yogurt and pickled onions.

Postharvest and food preservation are simple and low cost technologies which appropriate to developing countries to secure food availability, access, use and stability; hence, to enhance food security. Unfortunately, many government officials who dealing with postharvest and/or food

preservation in most countries have limited knowledge. In consequence, opportunities for transfer technologies to farmers and processors are limited. Waste of agricultural produces, limited of food supplies and suffering from malnutrition are the result. It is very important therefore; those government officials are educated to upgrade their capability for transferring technology to people in their country.

The department of Product Development was established in the Faculty of Agro-Industry in 1980, in line with the government's policy of upgrading agro-industries. Faculty staffs have expertise in various areas and have been conducting several international training since 1993. The department has been collaborated with TICA to conduct international training since 2009. The course on **"Food Security – Postharvest, Processing and Quality Assurance of Selected Agro-Industrial Products"** have been conducted since 2011 to 2013 at the department of Product Development. Sixty delicates from more than 20 countries were trained in this course. The knowledge from this course has been transferred to people to secure their country food security. In addition, network and linkage have been established among those participants during the past training courses.

The training course on **"Food Security – Postharvest, Processing and Quality Assurance of Selected Agro-Industrial Products"** is an essential tool to enhance food security for people in developing countries. Therefore, the department of Product Development will conduct the international training course on **"Food Security – Postharvest, Processing and Quality Assurance of Selected Agro-Industrial Products"** for another 3 years from 2014 to 2016.

This course will review the principle of post harvest, food preservation food safety, processing of nutritious food products from agricultural raw materials, quality measurement and control. It will discuss approaches to implement appropriate technologies to certain commodity. Particular emphases will be placed on practical and visiting several successful small scale agro-industries. Finally, it will review and evaluate the hierarchy of techniques used for postharvest, preservation and quality control to enhance food security.

Objectives

The program is designed to:

- provide basic scientific knowledge of the principles and concepts of postharvest, food preservation processing, packaging, and quality measurement and quality control
- enhance knowledge and understanding of how to select appropriate technology to maintain food security
- upgrade human capacities in transferring technology to needed party
- promote collaboration, communication and foster a professional network among participants

Course Contents

The program consists of series of lecture, practical and study trip.

Lecture and practical outline

- Review of food security – availability, accessibility, utilization and stability
- Production and postharvest of selected plants and animals for food
- Knowledge for production and preservation of nutritious foods from agricultural raw materials to promote food security for needed population
- Review of food safety emphasize on prevention of aflatoxin contamination in cereal crops as well as procedure to evaluate aflatoxin
- Packaging of raw materials and food products
- Review quality measurement of raw materials and food products including chemical, physical, microbiological and consumer preference
- Practicing and demonstration of how to measure specific qualities of raw materials and food products

- Case studies of how to implement food processing techniques in preservation of vegetable, fruit and fish
- Practicing in processing of selected agricultural raw materials such as vegetables, tropical fruits, soybean, peanut, rice and cassava

Study Trips

- visiting to the Royal Chitralada project and government agencies to observe activity related to postharvest practices and utilization of agricultural raw materials
- visiting Kasetsart experimental farms to understand on production system of agricultural raw materials prior to utilization
- visiting private companies related to production and commercialization of agro-industrial products
- visiting farm communities to observe their implementation of sufficient economic for Thai agricultural practices and processing value added products at village scale industries (OTOP)

Advance Assignment -Country Report

- Participants will be required to submit country report to the course coordinator at the first day of class as well as to present country report to the class at the second week of training. The country report format of this course is available on the TICA's website: http://www.tica.thaigov.net

Number of Participants: 20 persons

Qualifications

Applicants must fulfill the following requirement:

- Be nominated by their respective government;
- Age: less than fifty (50) years old;
- Education: equivalent to a bachelor degree of university/technical college, preferably possess B.Sc. level degree on food science, food engineering, agro-industry, agricultural science, home-economic, biotechnology, agricultural processing, agricultural product development, or have at least 5 years of related work experience;
- Language: proficiency in English (speaking, reading and writing)**.**
- Health must be good in both physical and mental, each participant should have a health certificate provided by an authorized physician. This form is also attached together with the Nomination Form. Pregnancy is regarded as a disqualifying condition for participation in the course.

Eligible Countries:

Asia & Middle East: Afghanistan, Bangladesh, Indonesia, Iran, Jordan, Maldives, Nepal, Pakistan, Sri Lanka, Timor-Leste

Oceania (Pacific Islands): Cook Island, Solomon Island, Samoa, Vanuatu

Africa: Burundi, Eritrea, Gambia, Ghana, Mauritania, Nigeria, Sudan, Zambia

Latin America & others: Argentina, Belize, Costa Rica, El Salvador, Guatemala, Guyana, Paraguay

Fellowship Arrangements:

1. Application Procedures

- Applicants interested in participating in the course must be nominated by their government and must submit three (3) completed nomination forms to the Royal Thai Embassy or Consulate in their respective countries before the closing date of application.

- In general, each country may nominate up to four (4) nominees for the course. However, nomination for certain courses may be limited to one or two nominees from each country due to limited seat available for participation.
- The Royal Thai Government will inform the nominating government (or relevant authority) whether or not nominee(s) have been accepted for the course, normally three weeks before the course starts.
- Further information about training courses held under AITC can be obtained from TICA's website: http://www.tica.thaigov.net/main

2. Allowances and Expenses

The Royal Thai Government will be responsible for the following allowances and expenses:

- An economy class electronic ticket (e-ticket) will be issued to each participant via email. Each of the participants is not allowed to change the flights route and schedules. Participants should not buy air tickets by themselves and should be advised that if they do so, the cost cannot be reimbursed from the Royal Thai Government. The Royal Thai Government will also arrange the domestic flight in Thailand for participants, if any.
- Each participant will receive a living allowance of 500 Baht (US$17) per day to cover meals, local transportation and other personal daily expenses. Accommodation will be arranged by the Royal Thai Government and all participants will stay at the same place. It is suggested that each participant should bring some pocket money approximately US$100 to cover the expenses before the allowance is paid.
- Minor medical treatment will be provided for participants who become ill during their stay in Thailand.
- The Royal Thai Government will provide transportation for the authorized field trips undertaken as part of the course.

3. Regulations

Participants are required to observe the following regulations:

- Participants must only stay at the places designated by the Royal Thai Government.
- Participants must strictly attend classes as scheduled and should not change their training subjects.
- Participants must not extend the training period.
- Participants must not bring any family members with them to Thailand.
- Participants must return to their home countries after the course completion (at the date as scheduled by the Royal Thai Government).
- Participants are required to travel only on the route designated by the Royal Thai Government and must not make any alterations. Please also be informed that the maximum allowable baggage that can be loaded on flights is 20 kilograms. Participants will be responsible for any cost incurred in exceeding this limit.
- Participants must observe rules and regulations of training institute(s).
- Participants must refrain from engaging in political activities, or any form of employment for profit or gain.

4. Visa Procedures

Prior to departure from their home country to Thailand, all participants must first obtain the appropriate visa from the Royal Thai Embassy or Consular representative in their countries. Presentation of the acceptance letter is required when applying for VISA. A maximum of 2,000 Baht VISA fee (approximately US$ 60) must be paid by a participant to the Royal Thai Embassy or Consular representative. Participants must request for the original receipt which could be later on reimbursed from the Royal Thai Government upon presenting the original receipt.

Further relevant information is available at the following addresses:

Human Resource Development Bureau (HRD Branch 2)
Thailand International Development Cooperation Agency
The Government Complex
Building B (South Zone) 8th Floor,
Chaengwattana Road, Lak Si, Bangkok 10210
Tel (662)203-5000 ext 43305
E-mail: tica@mfa.go.th
Website: http://www.tica.thaigov.net/main

The course will be conducted by:
Department of Product Development,
Faculty of Agro - Industry, Kasetsart University,
Jatujak, Bangkok 10900, Thailand
Tel. (662) 562-5006, Fax (662) 562-5005
E-mail: fagiavj@ku.ac.th

Course Coordinator:
Associate Professor Dr.Penkwan Chompreeda
Tel. /Fax: (662) 942-8661
E-mail: penkwan.c@ku.ac.th

Country Report Format

Country report (A4 size paper10-15 pages) should be submitted at the first day of the training course and presentation for 15-20 minutes for each country. Country report should comply of the following items**:-**

Introduction:

Name of the Training Course
Name and address of participant including email
Name of Country
Name of organization and its main task
Participant's position- role and responsibility

General information of the country:

Geographical status of the country, climate, population, official language, social, educational and economic conditions, GNP, Per-capita income, major import and export goods, natural resources and environmental situation, traditional foods etc.

Agriculture highlights:

Crops grown, areas, production, post harvest, agriculture and economy, etc.

Postharvest profile: technology, problems, packing technology, quality standardization, etc.

Food security profile: availability of foods, accessibility of foods, food balance, food prices and inflation

Expectations for the training course:

- Main interesting and reasons why do you pick up this training course
- Your expectations in learning from the training course
- Your anticipation in applying the knowledge and skills receives from this training course after you return to your home country