

## Thailand Country report

### 29<sup>th</sup> APPPC Session, 7-11 September 2015

From the year 2013 to 2014, there have been several major events and developments in plant protection in Thailand.

#### General Information

##### 1.1 National plant protection organization

Department of Agriculture (DOA), Ministry of Agriculture and Cooperatives (MOAC) serves as National Plant Protection Organization (NPPO) of Thailand. DOA is the agency that oversees import and export of plants and plant products under Plant Quarantine Act B.E. 2507 (1964), (No. 2) B.E. 2542 (1999) and (No. 3) B.E. 2551 (2008). It also carries out researches on pest surveillance and sets diagnostic protocols for quarantine pests. For plant pest management in the country, the Department of Agricultural Extension (DOAE) is the agency provide advice, training of pest management and pesticide advisory.

##### 1.2 Implementation of WTO-SPS Agreement

In 1998, MOAC established the National Bureau of Agricultural Commodity and Food Standards (ACFS) to be the national information center for agricultural and food standards and acted as the focal point for WTO-SPS/TBT (Codex Alimentarius, OIE and IPPC). ACFS has set up various schemes for the determination, inspection and certification of agricultural standards authorized by Agriculture Standards Act B.E. 2551 (2008) in order to ensure safety and quality of Thai agricultural commodities, that are in line with SPS requirements.

##### 1.3 Implementation of international pesticide conventions

Thailand is the member of Rotterdam Convention, Stockholm Convention and Montreal Protocol. DOA is authorized by Hazardous Substance Act (no.3) B.E.2551 (2008) to manage pesticides in line with international pesticide conventions. The major functions in pesticide management include pesticide registration, licensing for sale and development of recommendation on pesticide uses.

#### 1. Phytosanitary Matters (Plant Quarantine)

##### 2.1 Importation and Exportation

Since 2013, the legislation, regulations, organization, resources and facilities regarding plant quarantine under Plant Quarantine Act B.E. 2507 (1964), (No. 2) B.E. 2542 (1999) and (No. 3) B.E. 2551 (2008) have not been amended. Agricultural Regulatory Office of Department of Agriculture is still in charge of regulating and servicing the import and export of plants and plant products at ports while Plant Protection Research and Development Office carries out researches and provide technical information to support on plant quarantine issues.

**2.1.1 Importation:** During 2013 - 2014, DOA has published import requirements in the Government Gazette on Notification of Ministry of Agriculture and Cooperatives Re: Specification of plants and carriers from certain sources as prohibited articles, exceptions and conditions under the Plant Quarantine Act B.E. 2507 (No. 5) B.E. 2550 of 30 import requirements on 22 kinds of plants and plant products from 9 countries, as follows:

2013 : Kiwi from Australia and Chile, Strawberry, Nashi pear, Persimmon, Avocado, Citrus, Peach, Nectarine, Plum, Apricot from Australia, Apple from Australia and Chile, Cherry from Australia and Chile, Grape from Chile, Tobacco from Brazil and Laos, Cassava from Cambodia, Oil palm from Cambodia, Indonesia and Malaysia, Banana from Laos, Corn from Laos and Myanmar, Oil palm seed from Myanmar, Rubber from Myanmar and Button Mushroom spawn from United States of America.

2014: Tomato from Malaysia

**2.1.2 Exportation:** DOA has carried out the export quarantine services in compliance with the importing countries requirements under section 15 of Plant Quarantine Act B.E. 2507 (1964), (No. 2) B.E. 2542 (1999) and (No. 3) B.E. 2551 (2008). The implementation of issuing Phytosanitary Certificate (PC) for export and re-export are in line with the ISPM 12. During 2013 - 2014, DOA issued 305,308 and 325,361 copies of paper PC respectively. The exporters have applied for PC to accompany plant and plant products exporting to 228 countries which

are both members and non members of United Nation (UN). The top-ten countries which export PC were issued for were China, Vietnam, Malaysia, United States of America, Japan, Taiwan, Australia, United Arab Emirates, Indonesia and United Kingdom. In addition DOA has conducted the Hot Treatment (HT) and the Methyl Bromide (MB) fumigation treatment of wood packaging materials that complied with ISPM 15 for export. There are 351 registered producers, 243 for HT and 108 for MB which have been certified by DOA and allowed to stamp IPPC mark on treated wood packaging materials.

## **2.2 Bilateral phytosanitary agreement**

In 2009, the Australian Inspection and Quarantine Service (AQIS) found that motor vehicles export from Thailand contaminated with weed seeds. According to Australia's biosecurity requirements, all motor vehicles from Thailand must be inspected upon arrival. This caused delay and additional cost to the business. The negotiation between the Department of Agriculture (DOA), Thailand and the AQIS, Australia had resulted in bilateral agreement on "Motor Inspection Program Arrangement". Under this agreement DOA has to conduct the program in line with the biosecurity risk guide of AQIS. To fulfill the agreement, DOA has organized 4 intensive trainings for 80 inspectors. After completion of the training the incidence of weed found in the export motor vehicle decreased by almost 94% and subsequently AQIS changed the inspection method from 100% to random inspection.

## **2.3 Cooperation projects**

### **2.3.1 Thailand – Germany**

During 2013 - 2014, Thailand has continued to strengthen the sustainable agrifood systems through the use of biocontrol agents (BCA). It was carried out in cooperation with German International Cooperation (GIZ) under ASEAN Biocontrol for Sustainable Agrifood Systems (ASEAN Biocontrol).

### **2.3.2 Thailand – Australia**

During 2013 - 2014, DOA has still engaged in research and training on pest diagnostics in cooperation with Australian Centre for International Agricultural Research (ACIAR). The purposes of this project are to enhance the general and specific skills in plant pest and disease diagnostics using both molecular and traditional diagnostic techniques, and to develop diagnostic protocols and simple manuals for molecular diagnostics of selected plant pathogens.

## **2.4 Capacity building workshops**

### **2.4.1 The Regional Training Workshop on Biological Control**

The regional training workshop on biological control agents (BCA) was organised by Department of Agricultural Extension (DOAE) in collaboration with APPPC Standing Committee on IPM which was held in Bangkok, from 25 February - 2 March 2013. The objectives of the training workshop were to provide participants with updated information and training course on the BCA with practical experience of Thailand to assist participants in the enhancement of sustainable development of BCA in their countries. In particular, the training workshop was planned to share experiences and discuss opportunities and challenges for quality production and sustainable application of BCA in the context of IPM strategies. There are 11 participating countries in the workshop; Bangladesh, Cambodia, China, Indonesia, Laos, Malaysia, Myanmar, Nepal, Philippines, Thailand, and Vietnam.

### **2.4.2 APPPC Systems Approach Workshop**

In November 2013, the National Bureau of Agricultural Commodity and Food Standards (ACFS) facilitated the organization of "APPPC Systems Approach Workshop" which was held in Bangkok by the Department of Agriculture, Fisheries and Forestry (DAFF), Australia collaboration with FAO Regional Representative for Asia and the Pacific (FAO-RAP). The workshop focused on integrated measures in systems approach for pest risk management in line with ISPM No.14 which gives more advantages than using only one measure. Selected case studies and sharing of experience on the implementation of systems approach were included in the workshop. One of the key outcomes of the workshop will be the development of the next steps of the future systems approach programme. There are 15 participating countries in the

workshop; Australia, Bangladesh, Cambodia, China, Laos, Malaysia, Myanmar, Nepal, New Zealand, Philippines, Republic of Korea, Sri Lanka, Thailand, Tonga and Vietnam.

#### **2.4.3 Inception workshop of project “Support to Capacity Development in Implementation of Pest Surveillance and Information Management in South-East Asian (GCP/RAS/286/ROK)”**

In November 2013, Thailand was hosted Inception workshop of the project “Support to Capacity Development in Implementation of Pest Surveillance and Information Management in South-East Asian (GCP/RAS/286/ROK)”. This workshop was organized in Bangkok by FAO Regional Representative for Asia and the Pacific (FAO-RAP) collaboration with Korean Government as the donor country of the project. The project would run from 2013 to 2016 and have circulated the host of the workshop among the participating countries. The objective of the project was to emphasis the importance of pest surveillance because it is the basis to implement International Standard for Phytosanitary Measures (ISPMs). There were six participating countries in the workshop; Cambodia, Laos, Myanmar, Nepal, Thailand and Vietnam.

#### **2.4.4 APPPC Workshop on Building Understanding and Preparedness for Electronic Phytosanitary Certification**

In October 2014, the Department of Agriculture (DOA) facilitated the organization of APPPC Workshop on Building Understanding and Preparedness for Electronic Phytosanitary Certification. This workshop was held in Bangkok by FAO Regional Representative for Asia and the Pacific (FAO-RAP). The workshop provided an opportunity for participants to review the existing electronic systems relating to phytosanitary certification and the systems that are under development, and to look at the issues and gaps of future systems and areas for collaboration. There was general agreement among participants that the APPPC should establish an APPPC ePhyto working group to provide guidance and coordinate activities concerned. A recommended timeline for future developments concerning ePhyto was drafted. There were 19 participating countries in the workshop; Australia, Bangladesh, Cambodia, China, Fiji, Indonesia, Laos, Malaysia, Myanmar, Nepal, New Zealand, Philippines, Republic of Korea, Singapore, Sri Lanka, Thailand, Timor-Leste, Tonga and Vietnam

### **2.5 Information exchange**

As Official Contact point (OCP), the National Bureau of Agricultural Commodity and Food Standards (ACFS) has posted the following information on the International Phytosanitary Portal (IPP) and APPPC website:

#### **2.5.1 IPP**

During 2013 -2014 there were no change of information undernational reporting obligation (NRO) which are the responsibility of the contracting parties to the IPPC such as; Description of the NPPO, Legislation, Entry points, List of Regulated Pests, Organizational Arrangements of Plant Protection. In 2013, there was additional information on pest status report entitled “Absence of *Pantoea stewartii* subsp. *stewartii* from Thailand”. This information came from results of specific survey conducted by DOA In this specific survey 1,054 samples were collected in 142 sites from 20 locations of corn production areas that showed leaf blight symptoms. Using ELISA detection kit for *Pantoea stewartii* and PCR following the protocol of Coplin et al.(2002). Results showed that all samples were negative for *P. stewartii* subsp. *stewartii* in both ELISA and PCR methods.

#### **2.5.2 APPPC website**

Additional information to those posted in IPP has been posted on APPPC website. They are information on pest and pesticide management. During 2013 -2014, important information posted were such as; Pest status of *Pantoea stewartii* subsp.*stewartii* which is absent from Thailand, 15 items of rules or legislations of pesticides under Hazardous Substance Act (no.3) B.E.2551 (2008) and the event of the 9th International Symposium on Fruit Flies of Economic Importance (ISFFEI) from 12-16 May 2014 in Bangkok, Thailand. This symposium had served as a forum for scientists and stakeholders across the world to share recent know-how and

technologies related to fruit flies control. They symposium was attended by 388 participants from 60 countries.

## **2.6 Cooperation in the development of ISPMs**

National Bureau of Agricultural Commodity and Food Standards (ACFS) has established the National Committee on Phytosanitary Measures (NCPM) under MOAC in 2007, composing of the representatives from Department of Agriculture (DOA), Department of Agriculture Extension (DOAE), relevant universities, forestry scientist and stakeholders in private sector. The Committee elaborated comments on draft ISPMs and related issues under IPPC. Since 2011, the IPPC Secretariat has developed the IPPC Online Comment System (OCS), as Official Contact point (OCP), ACFS cooperated with the agencies concerned in making comments on draft ISPMs, draft specification during member consultation period and substantial concerns commenting period by using OCS and analyze the data to NCPM for approval before submit to the IPPC Secretariat.

## **2.7 Phytosanitary capacity development**

Department of Agriculture (DOA) has developed the training courses on phytosanitary matters to strengthen the knowledge of their staff, especially those working at plant official checkpoints in the Agricultural Regulatory Office. During 2013 -2014, there were courses, such as; mite, spider and piercing sucking insect identification, conditions on phytosanitary requirements of importing countries, visual inspection skill to intercept the quarantine pests. The course of plant pest surveillance in line with ISPM 6 has been developed for the officials in the Plant Protection Research and Development Office to survey pests in the area correctly and efficiently.

## **2.8 9<sup>th</sup> International Symposium on Fruit Flies of Economic Importance (ISFFEI)**

The Symposium was held in Bangkok, Thailand from 12-16 May 2014, hosted by the Department of Agricultural Extension (DOAE) in collaboration with other agencies. The purpose of the symposium is to bring together scientists, researchers, academicians and those who are involved with various aspects of fruit flies of economic importance from government agencies, universities, research and extension institutions, international agencies, and industries worldwide to present and discuss all aspects of fruit flies of economic importance including recent development related to the environment-friendly pest management strategies. Additionally, outcomes of the symposium lead to advance knowledge and better collaboration among fruit fly experts around the world.

## **2.9 Establishment pest list database**

Pest list information in Thailand comes from many sources and are varied in accuracy. Many agencies involved in plant protection, pest management, research institutions, universities, general public and scientific journal have their own pest records or pest information and some have distributed to the public or website. This situation may lead to the unreliability of pest information from Thailand and could become trade barrier as the importing countries have collected the pest information from all available sources to conduct pest risk analysis. Since 2013, the National Bureau of Agricultural Commodity and Food Standards (ACFS) has developed a system to verify the reported or published pest names of Thailand by facilitating the examination of the accuracy and updating the information at the same time. The process began with collecting the name of pests in Thailand from the database of Kasetsart University's library then dividing them into 6 groups i.e. 1.Bacteria, Rickettsia, Phytoplasma, Spiroplasma and Protozoa 2.Virus and Viroid 3.Fungi 4.Nematode 5.Weed 6. Insect, Mite, Vertebrate, and Invertebrate. ACFS then invited specialists of each groups to work together to verify and update the data. The specialists come from NPPO, universities and other agencies concerned. The mechanisms used for data examination are meeting, seminar and electronic communication. The name of pests after verification and updating have been gradually placed in database and proposed to the Verification of Phytosanitary Database Committee under the

Ministry of Agriculture and Cooperatives for approval. This database would be the most updated pest lists of Thailand which can assure a high level of accuracy.

### 3. Surveillance

Department of Agriculture (DOA), as NPPO of Thailand has conducted the specific surveys to obtain information on diseases in crops to determine their status on specific sites of each crops over a defined period of time. DOA has followed ISPM 6 in carrying out these surveys results of which could confirm the presence or distribution of diseases in the areas, or on the crops, or their absence from the areas. Since 2010 until now, there have been many specific surveys such as,

(1) Survey on leaf blight and vascular wilt disease of maize (*Pantoea agglomerans*) to support declaration that corn seed production area for exportation are free from this disease. The survey was taken during 2010 – 2013 at 155 sites of corn seed production area for exportation throughout the country.

(2) Survey on smut fungi, disease of shallot and garlic (*Urocystis cepulae*) to support declaration that shallot and garlic production areas for exportation are free from this disease. The survey was taken during 2011 – 2013 at 393 sites of shallot and garlic production area for exportation throughout the country.

(3) Survey on disease(s) caused by *Pseudomonas syringae* pv. *syringae* to support declaration that Thailand free from this disease, particularly it has never been detected on onion and garlic. The survey was taken during 2010 – 2013 at 10 provinces in the onion and garlic production areas for exportation. It has taken 93 samples to identify in the DOA's laboratory using Arginine dihydrolase test and PCR method, both results showed all samples were negative.

(4) Survey on corn downy mildew to support declaration that the cause of disease is *Peronosclerospora sorghi* not *Peronosclerospora philippinensis*. The survey was taken during 2010 – 2013 in 184 sites of corn seed production area throughout the country.

### 4. Pest management

#### 4.1 Pink cassava mealybug (*Phenacoccus manihoti*) (Continuous operation)

Since 2013, Thailand has succeeded in controlling pink cassava mealybug. However, the Department of Agricultural Extension (DOAE) continues to monitor the situation in the fields and recommended that farmers should use integrated pest management (IPM) as follows,

- prepare the planting sites to improve soil and weed control,
- treat cassava stem cuttings by dipping in the pesticide before planting,
- survey and observe the infestation of pink cassava mealybug,
- release natural enemies (*Chrysopa basalis* and *Anagyrus lopezi*)

(DOAE has planned the production of natural enemies, assigned the releasing spots, the amount and period of releasing.)

- use healthy cassava stem cuttings,
- use resistant varieties,
- prepare pest free seedbeds

DOAE has set up 882 units of Community Pest Management Centers (CPMCs) in every district throughout Thailand to manage IPM by themselves in cassava plantation areas, CPMCs could practice the said IPM to decrease pink cassava mealybug population in Thailand to no harmful level.

#### 4.2 Black-headed caterpillar (*Opisina orenosella*) (Continuous operation)

Black-headed caterpillar (*Opisina orenosella*) is one of the major pests of coconut causing considerable damage to coconut industry in Thailand. It has been found that from 2009 to 2013 the outbreaks of black-headed caterpillar has caused 6.01 % decrease of coconut plantation area. In 2012, Department of Agriculture (DOA) has introduced the natural enemy of black headed caterpillar *Goniozus nephantidis* under collaboration with Coconut Research Institute of Sri Lanka, but using biological control alone was not effective enough. In 2013, Department of

Agriculture (DOA) started research on chemical control by injection in the coconut trunk that were taller than 12 meters with emamectin benzoate 1.92 % EC, dosage 30 cc. per tree. Department of Agricultural Extension (DOAE) has taken the research results from DOA and recommended that farmers should cut and burn the leaves that were destroyed before injection. For coconut that were less than 12 meters tall, DOAE recommended using integrated pest management (IPM) as follows,

- use biological control with parasitoid (*Bacon hebetor*),
- always cut and burn the leaves that were destroyed,
- observe the severity of the infestation level,
  - (1) low level; more than 13 green leaves, cut and burn the leaves that were destroyed and release parasitoid (*Bacon hebetor*) at the rate of 200 per 0.16 hectare 3 consecutive times at 7-15 days interval
  - (2) middle level; more than 6 - 15 green leaves, cut and burn the leaves that were destroyed and foliar spray by pesticides recommended by DOA
  - (3) high level; green leaves less than 6 cut and burn the coconut tree

## **5. Pesticide management**

At present, Hazardous Substance Act (No. 3) B.E. 2551 (2008), the Ministerial and Departmental Notifications are still applied. Registration procedure and requirements have been changed. Department of Agriculture (DOA) issued a notification on registration and licenses. Toxicological data of technical grade materials and finished products must be generated by the Good Laboratory Practices (GLPs) by certified laboratory according to OECD standard. The registration and license certificate in the manufacturing country must be certified by the competent authority, representative the country and shall be recognized as an international document (legalized). Until 2014, there are 98 items in list of banned pesticides of Thailand. In 2014, EPN and dicotophos were banned and added in the list of hazardous substance under responsibility of DOA as Type 4 (banned pesticides).

### **5.1 The activities in pesticide management.**

#### **5.1.1 Implementation of international treaties and conventions**

During 2013 – 2014, there were no change in the implementation according to Stockholm Convention and Montreal Protocol in Thailand. For Rotterdam Convention, Thailand had three new pesticides included in Annex III of the Convention namely, Methamidophos, Fenthion 640 ULV and Trichlorfon.

#### **5.1.2 Change in the regulations for biopesticides**

Department of Agriculture (DOA) joined ASEAN-GIZ Cooperation Project on ASEAN biocontrol (ABC) for Sustainable Agrifood System. The project management unit (PMU) has been established in DOA and the National Biocontrol Task Force has been set up. This task force recommended that the Biopesticide Data Evaluation Working Group shall revise data requirements for pheromones registration.

#### **5.1.3 Implementation of Technical Evaluation of Application Dossiers**

After consideration, EPN and dicotophos were banned and added to the list of hazardous substance under responsibility of DOA as Type 4.

### **5.2 Status of management of obsolete pesticides**

In 2014, reviewing of pesticides to eliminate highly hazardous pesticide formulation, EPN and dicotophos were banned and added to the list of hazardous substance under responsibility of DOA as Type 4.

### **5.3 Assessment of bioefficacy test protocol**

Most of pesticides registered in Thailand have undergone bioefficacy test in the country. The officials of Plant Protection Research and Development Office, DOA shall inspect and recommend the agencies to register pesticide in edible crops. DOA has established the Pesticide Resurgence Working Group responsible for monitoring and evaluating pesticide usage in rice field which causes resurgence of Brown plant hopper (BPH).

### **5.3.1 Registration Application and Data Requirement**

In 2015, companies have to submit application dossiers via National Single Window System (NSW).

### **5.3.2 Pesticide Registration and Licensing**

Under The Hazardous Substance Act (No. 3) B.E. 2551(2008), the regular registration is valid for 6 years. The regular registration will expire in 2017. Therefore, the DOA establishes the Working Group for Evaluation Pesticide for Re-registration. The responsibilities are evaluation and set up criteria of data requirement submission for re-registration approval. The data requirement is still under consideration process.

### **5.3.3 Post-Registration Activities**

The information on pesticide import, export, registered and banned pesticide, license, label, importer, producer, wholesaler and retailer are available at Hazardous Substance Regulatory Group, Office of Agricultural Regulatory. The information has been collected in files but not in database and is available upon request. Some information has been available on website, [www.doa.go.th/ard/](http://www.doa.go.th/ard/) and apppc website (www.apppc.org).