REPORT OF ATTACHMENT PROGRAM ON WEEVILS OF QUARANTINE IMPORTANCE WITH SPECIAL EMPHASIS ON STORED PRODUCT INSECT PESTS

7th November to 19th December 2018

By

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(Vietnam)

Organized by:

Tokyo University of Agriculture
(Tokyo NODAI), Japan

In Collaboration with:

bionet aseanet

ASEAN Network on Taxonomy

2018

ATTACHMENT REPORT

"WEEVILS OF QUARANTINE IMPORTANCE IN JAPAN FROM 7thNOVEMBER TO 19th DECEMBER 2018"

(JAJI Funded project on Taxonomic Capacity Building to support Market Access for Agriculture Trade in the ASEAN Region)
Organizer: Tokyo University of Agriculture (NODAI), Japan
Duration: 7th November to 19th December 2018

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1. BACKGROUND INFORMATION

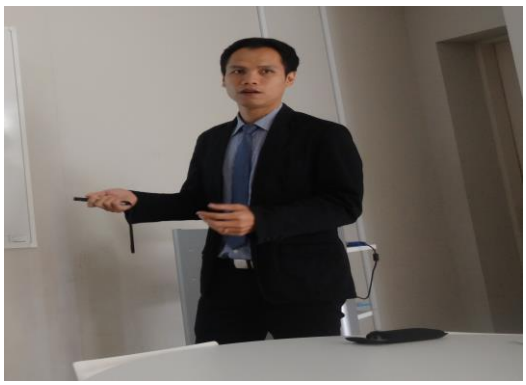
The ASEAN Plant Health Cooperation Network (APHCN) – ASEANET Project "Taxonomic capacity building to support market access for agricultural trade in the ASEAN region", funded by the Japan ASEAN Integration Fund (JAIF) successfully held its capacity building activity, entitled "Training Workshop on Diagnostics of Weevils of Quarantine Importance", from 10th to 22nd July 2017 at Institute of Weed Science, Entomology and Plant Pathology, University of the Philippines Los Baños, Los Baños, Laguna, Philippines. Based on the commendation of the resource persons, I'm as one of three successful candidates for this program.

Profile:

No.1

Dr Hoang Kim Thoa
Diagnosis and Identification Division
Plant Protection Department,
Hanoi, Vietnam

No.2



Mr. Ittipon Bannakan
Professional Entomologist
Department of Agriculture,
Bangkok, Thailand

No.3

Mr. Kemas Usman
Plant Quarantine Officer
Indonesian Agricultural Quarantine Agency,
Indonesia

2. OBJECTIVES OF THE ATTACHMENT

The objectives of the attachment program are:

- To transfer skills and knowledge of weevil experts specifically Japanese experts on Weevils to counterparts in ASEAN countries so as to increase capacity, experience, and knowledge of the participants in the diagnostics of pests and taxonomic identification.

-To strengthen he diagnostic capacity by providing participants with practical understanding of the concept of weevils, their identification and current management practices, and

- Total these selected and trained participants who would undergo more intensive technical training and subsequently serve as potential ASEAN resource

persons on the identification of weevils using their gained expertise to the benefit of all ASEAN member states and the ASEAN Diagnostic Network.

3. PROGRAM OF ATTACHMENT (see Annex 1)

4. DAILY ACTIVITIES

Time	Activities		Results
	Laboratory	Field trip	
Briefing in NODAI			
Week 1 8-11 Nov.	• Orientation at NODAI	• Visit to Mira - Kan Museum	• Introduction for NODAI Setagaya: outline, facilities, graduated and researcher activities and then Introduction specimen room, library, etc. • The Miraikan is a national science museum that is used to showcase Japan's scientific and technology research efforts. The museum's centerpiece is a large globe known as the Tsunagari. The globe is used to display real time, historical and future projections of scientific data.
		• Visit to Tama Zoo	• The Tama Zoological Park, the zoo consists of four main areas, namely the African Garden, the Australian Garden, the Asiatic Garden, and the Insectariums, where around 350 species of mammals, birds, reptiles and amphibians are kept.
Training in Yokohama Plant Protection Centre			
Week 2 12-18 Nov.	• Visit to Yokohama Plant Protection Centre		• Introduction Plant Protection system in Japan including Introduction Historical Background, SPS Agreement, IPPC, etc by Mr Yukio Yokoi.
	• Practical in Laboratory on Identification of beetle store product pest by Mr Masumoto.		• Identified some family belong to order Coleoptera as stored pest: Bostrychoidae (Bostrichidae; Ptinidae, Anobiidae, Lyctidae); Cucujoidae: (Silvanidae, Mycetophagidae, Cucujidae, Anthricidae, Cryptophagidae, Buturidae); Curculionoidae (Anthribiidae, Curculionidae,

Time	Activities		Results
	Laboratory	**Field trip**	
			Dryophthoridae); Chrysommeloidae (Bruchidae, Chrysomelidae); Dermestoidae (Dermestidae) Dermestes, Anthrenus, Attagenus, Trogoderma. • Identified speciments: (*Anthrenus* sp.; *Anthrenus srophulariae; Trogoderma granarium*; *Trogoderma inclusum*; *Trogoderma variable*; *Dermestes maculatus*; *Dermestes frischi*; *Dermestes peruvianus*; *Dermestesater*; *Dermestes haemorhoidalis,* Tenebrionidae (*Triboliumconfusum).*
	• Guide to the identification of Lepidoptera, morphology (Adult and larvae stages) by Mr. Higo Yuichi		• Identify: Pyralidae: (*Plodia interpunctella*; *Corcyra ceohalonica*; *Cadra cautella*; *Pyralis farinalis);* Gelechiidae (*Sitotriga cerealella);* Crambidae (*Conogethes punctiferalis)* Noctuidae (*Helicocerpa armigera);* Tortricidae (*Cydia pomonella);*Tenthreedinidae (*Allantus luctifer).*
Training at Kobe plant protection station			
Week 3 19-25 Nov.	• Introduction to Kobe Plant Protection Station.		• Introduction to Kobe plant protection station: Structure of Organization, inspection areas in Kobe Port, Plant quarantine procedures, facilities, and laboratories, specimen collection
	• Lecture and laboratory: Lecture and practical at Kobe plant protection station by Mr Tatsuo Matsuda		• Overview of MAFF Kobe plant protection station and Identification on stored beetles • Provided the key of stored beetles and identify specimen (*Alphitophagus bifasciatus, Tribolium confusum, Tribolium destructor, Tribolium madens, Tenebriomolitor, Tenebrio obscutus, Palembus*

Time	Activities		Results
	Laboratory	Field trip	
			dermestoides, Alphitobius diaperinus, Alphitobius leavigatus, Palorus ratzeburgi, Palorus cerylonoides, Latheticus oryzae, Gnathocerus cornotus, Gnathocerus maxillosus, Caryedon serratus, Zabrotes subfasciatus, Acanthocelides obtectus, Bruchus pisorum, Callosobruchus chinensis, Callosobruchus maculatus).
		• Visit to Warehouse at Kamingumi Co.,Ltd in Port Island. • Visits to Silo at Showa Sangyo Company.	• Visitor warehouse system, observation fumigation system and quarantine inspector checking pest on fruit import • Introduction background company by video and visitor silo system.
	• Presentation		• Presentation about plant quarantines our country and summary results training 2 weeks in Yokohama and Kobe station.
Tsukuba Post – entry Station			
Week 4 26 Nov- 2 Dec.		• Visit to Tsukuba Post – entry Station • Visit to Botanical Garden • Visit to Meguro Parasitological Museum	• Introduction for Tsukuba Post – entry Station and observation green house. In Tsukuba we are discussion about testing plant growing pest and identify for key for identify for diseases quarantines pest and domestic pest. • The Botanical Gardens provide an unparalleled collection of plants from all around the world. • The Meguro Parasitological Museum was established in 1953. The museum houses about

Time	Activities		Results
	Laboratory	Field trip	
			60,000 parasite specimens, as well as a sizable. Library of parasitological books and papers it also has jar upon jar of preserved parasites to look at.
		• Visit to National Food Research Institute (NARO).	• Introduction for Division of Food safety by Dr Akihiro Miyanohista (technological support for quality assurance in radioactivity measurement)
		• Visit to ANA Fruit Company	• ANA flagship products are our own-brand bananas-frescana from the Philippines and Tanabe Farm from Ecuador, which have been developed in conjunction with All Nippon Airways Trading Co., Ltd. At ANA Foods, oversee everything from production to sales to deliver a safe, reassuring product that allows customers to understand where their bananas come from.
		• Visit to Nissan Chemical Corporation.	• Nissan Chemical was founded in 1887 as Tokyo JinzoHiryo Nissan Chemical Corp. engages in the manufacture and sale of industrial chemicals. It operates through the following segments: Chemicals, Functional Materials, Agrochemicals, Pharmaceuticals, Wholesale Business, and includes fertilizers
Tokyo University of Agriculture (Atsugi Campus)			
Week 5 2-8 Dec.	• Visit to Tokyo University of Agriculture (Atsugi Campus) • Practical in Entomology laboratory		• Introduction of Entomology laboratory by Dr Hiroaki Kojima • Introduction of Weevils and their identification primer. • Practical for identification: Re-

Time	Activities		Results
	Laboratory	Field trip	
			check identity of 22 species including: Family Curculionidae (genus *Molytinae, Cossoninae, Curculioninae, Barininae, Entiminae, Coroderinae, Cryptorhynchinae, Rhamphininae, Anthonominae, Ceutohynchinae* and genus *Melysmodenae* family Dryophthoridae; family Anthribidae.
		• Visit to FuJi Flavor Co.,Ltd.	• Presentation: introduction for FUJI Flavor by Ms Kazuya Morita.
	• Practical in Entomology laboratory.		• All participants presentation for common insects pests in product and manage in our country. • Practical for Identification: Subfamily Entimininae (some genus *Sitonini, Ottistrini, Cyphicerini*); Molytinae (*Molytini, Mecysolobini, Ithyporini*); *Conoderinae, Lixinae, Cryptorhynchinae, Pachirhychini, Tamimechini,,Ithyporini*
Tokyo University of Agriculture (Atsugi Campus)			
Week 6 9-15 Dec.	• Lecture and Practical in Entomology laboratory.		• Introduce for some weevils damage on palm tree, using weevil control aquatic plant
		• Visit to Kanagawa Prefecture Museum of Natural History.	• In the museum, exhibitions of collection about the formation of solar system, history of earth, evolution of life and biodiversity, distinctive of rocks nature from Sagami Bay to Hakone volcano
	• Practical on Laboratory. • Preparation for Presentation at Atsugi campus.		• Checklist stored pests in Japan from books. • Presentation for training at Atsugi campus.

Time	Activities		Results
	Laboratory	Field trip	
NODAI, Setagaya			
Week 7 16-19 Dec.	• Presentation • Writing final report • Departure		• Presentation • Ceremony closing • Farewell dinner at NODAI, Setagaya

5. SUMMARY OF THE ATTACHMENT

The training workshop on Diagnostic of Weevils of Quarantine importance has been implemented in Japan from 7th November to 19th December 2018 with 3 participants from Vietnam, Thailand and Indonesia has selected workshop in Los Banos, Philippine under this ASEAN - endorsed Project and expert of NODAI from Japan. The Attachment Program training in 5 locations [Tokyo NODAI University (Setagaya), Yokohama Plant Protection Station, Kobe Plant Protection Station, Tsukuba post entry and Tokyo NODAI (Asutgi)], we learned so many knowledge of skill for identify and all most satisfying.

Firstly, the training workshop enabled participants to improve knowledge and skills for identify insect. It benefited participants by improving their capacity in identification of several important species by focusing mainly character and distinguishes among species. To improve personal capacity in implementation of pest identification, laboratory practice has been included in the training program. Participants actively participated in practical training to identify the pest species by using the pest specimens comparing the target pests with the pictures provided by lecturer (Dr Kojima). We were especially interested use key to identify species have collected from to Malaysia and Vietnam. They have learned how to identify differentiate between similar pest species by of morphological characters such as mouthpart, wing, leg, abdomen, genitalia etc. as well as how to handle the microscopes and lab tools in pest identification by SEM. According to the result after recheck of all participants we can identify family (about 8 fam.) and subfamilies (over 15 subf.) in groups Curculionoidae and their Curculionidae (true weevils). We focus identify groups Rhynchophoridae (Dryopthoridae) and Molytinae (Cryptorhynchinae) this pest importance have been intercepted by quarantine. Dr Kojima gave a lecture on weevils - true weevils as an expertise subject, introducing diverse kinds of families one by one and their geographic distribution and host range. He provided key and specimens for the trainees with reference books on the identification can to be used for their further study. And then, we learn how to use pheromone trap can control some species or use weevil biological control aquatic plant, ect.

Secondly, to experience real pest survey method, we took a field trip to a Miraikan Museum, Meguo parasitological museum, Kanagawa prefectural of museum of natural history; a lot of specimens have been exhibition like as insect, animal and parasite species. Dr Keiko and her students guided all the participants and explaining when we came museum.

Thirdly, although lab practices was excellence we have real experience when visited to Quarantine system in Japan such as Yokohama plant protection station, Kobe plant protection station and Tsukuba port entry station centre. We have been visited quarantine inspector checking pets on fruit imported in Quarantine station (Kobe station, Yokohama station). Quarantine officer in the Plant Quarantine Yokohama and Kobe provided specimen and key for identification of some storage insect pests based on morphological characters and dissection (male genital, female genital organs). And then so experience we can learned in Tsukuba port entry like testing in green house, management quarantine pest or domestic pest and ability to identifying insect pest related to import export in Japan.

Country reports from Vietnam, Thailand and Indonesia presented country reports on “Plant protection in their country and major storage insect pest”. We also introduced in detail the background Plant protection in our country and ability identification how can use method for control pest. In the FuJi flavor company; ANA Food Co., LTD; NISAN chemical company presentation highlighted the importance of surveillance and control insect as main insect pest threatening the horticultural crops and trade. He also introduced some pesticide or trap can use for survey insect.

In addition, we also visited Sankeien garden, Botanical garden, Tama Zoo, all participants could share experience in founded insect for participants from Thailand, Vietnam and Indonesia. There are some aspects will be a excellent references such as good facilities in all laboratory including university and quarantine centre, building networking in Japanese Coleopteran, Lepidopteran expert in university and quarantine officer very excellence.

6. RECOMMENDATION FOR FUTURE ACTIVITIES

The training program was conducted successfully for all the participants took active part in all the 43 days of the training in Japan. During the workshop training I made several recommendations. The most outstanding are:

1) This is the training program should be split into two events one as identify by molecular at larvae stage and identify by morphology at adult.

2) Training another group pest such as order Mealybugs, Thysanoptera, Lepidoptera damage on fruit (especially larvae stage), Store product Mites.

7. ACKNOWLEDGEMENTS

1) This workshop provides a method and standard key help us to create an intensive educational experience in a short amount of time for identify weevils.
2) Learning about: information of sampling technique of grain commodities (wheat, soybean, corn, etc.), quarantine inspection at silo; and observation of fumigation system at silo, learn about using light trap, pheromone trap for control some species, etc.,
3) Learn about how to use SEM system scanning to identification family or subfamily weevil.

8. REFERENCES

1) Major insect and other pests of economic plant in japan. (2006). Edited and published by the Japanese society of applied entomology and Zoology.
2) Kenji Umeya, Toshitsugu Okada, 2003. Agricultural insect pests in Japan.
3) An Illustrated Key to major Subfamilies of Curculionidae and Their introductions.
4) Introduction of Weevils and Their identification primer.
5) An Illustrated Key to Major Curculionidae families from the Asean region.
6) Introduction of Major subfamilies, Tribe and partly genera of Dryophthoridae.
7) An Illustrated key to major families of Curculionoidae and their introductions

8) An Illustrated key to major subfamilies of Curculionidae and their introductions

9) Introduction for some weevils pollinating palm tree can using weevil control aquatic plant.

10) Brochure guide ANA food Co., LTD

11) Brochure guide Tokyo University of Agriculture

12) Folder National Agriculture and Food Research Organization (NARO)

13) Brochure guide Food Research Institute, NARO (NFRI).

14) Brochure Introduction Plant Protection System in Japan

15) Brochure Overview of MAFF Kobe Plant Protection station

16) Folder guide Tsukuba Agriculture Research Hall

17) Folder True weevils (part 1) Coleoptera: Curculionidae (Subfamilies Raymondionyminae to Smicronychinae).

18) Folder A phylogenetic classification of curculionidae to families and subfamilies.

19) Visitor guide Kanagawa prefectural museum of natural history

20) Brochure Product catalog FuJi Flavor Co. LTD

21) Folder Miraikan Floor guide

22) Folder Sankeien garden. Place of scenic beauty

23) Website on Internet

9. ANNEXES (No.1)

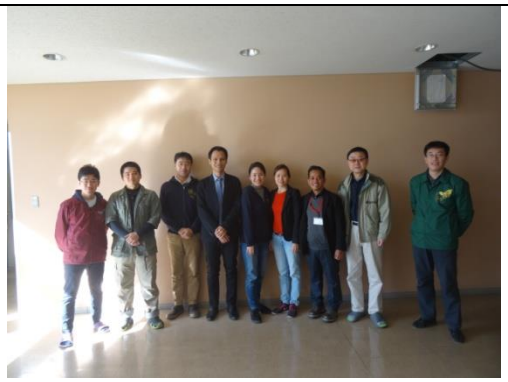
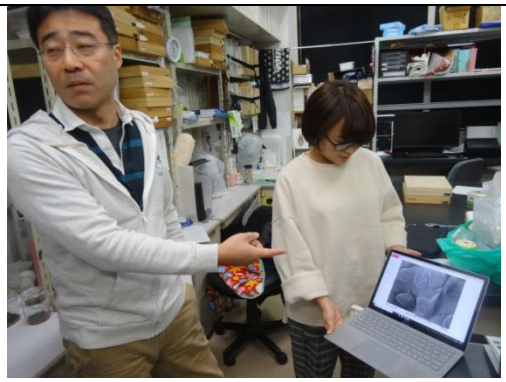
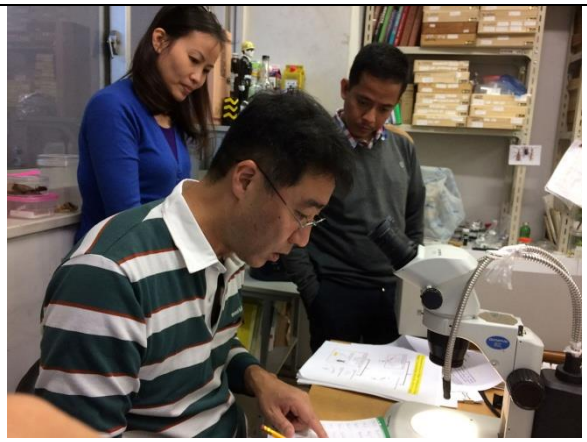
Agenda for weevils of quarantine importance in Japan from 7th November to 19th December

Date	Activities	Responsible Scientist(s)
Nov 7 (Wed)	From Ha Noi to Tokyo Haneda airport to Business Hotel Kyodo	Mr Hoshino Ryohel and MrIkomaYutarou
Nov 8 (Thurs)	Briefing and Orientation at NODAI	Dr Keiko Natsuaki and All participants
Nov 9 (Fri)	Visit to Kagaku Mirai-kan Museum	Allparticipants
Nov 10 (Sat)	Visit to Tama Zoo	Allparticipants
Nov 11 (Sun)	Holiday (visit to temple)	Allparticipants
Nov 12 (Mon)	- Transfer to Yokohama (Yokohama plant protection station) - Explanation for Japan's plant quarantine + Video + Presentation	All participants Mr Yukio Yokoi MrRen Iwaizumi
Nov 13 (Tue)	Lecture and practice for diagnostic adult	Mr Matsumoto
Nov 14 (Wed)	Morphological characters of stored product insects: Lecture and practice for Dermestid beetle	Mr Matsumoto
Nov 15 (Thurs)	Lecture and practice for Lepidoptera larvae	Mr Higo Yuichi
Nov 16 (Fri)	Lecture and practice for Lepidoptera adult	Mr Higo Yuichi
Nov 17 (Sat)	Visit to Yokohama city,	
Nov 18 (Sun)	Move to Kobe from Yokohama	All participant
Nov 19 (Mon)	Orientation (Kobe plant protection station) Lecture and practice for	Mr Tatsuo
Nov 20 (Tue)	Identification of storage pests in the laboratory	Mr Tatsuo
Nov 21 (Wed)	Visit to: Warehouse at Kamigumi Co., Ltd. in Port Island, and Silo at Showa Company	Mr Tatsuo

Date	Activities	Responsible Scientist(s)
Nov 22 (Thurs)	Presentation Visit to Kobe Port Tower	Kobe plant protection staff
Nov 23 (Fri)	Move to Tokyo from Kobe	All participants
Nov 24 (Sat)	Visit to Botanical Garden and Meguo Parasitological Museum	All participants, Dr Keiko, student in Nodai
Nov 25 (Sun)	Holiday	
Nov 26 (Mon.)	Visit to National Agriculture and Food Research Organization	All participants,
Nov 27 (Tue.)	Visit to Tsukuba Post-entry Station, MAFF and Sightseeing Botanical Garden	All participants, Ms Kaori
Nov 28 (Wed)	Food research Institute (NARO)	Dr Akihiro Miyanohista
Nov 29 (Thurs)	Visit to Nissan chemical corporation	All participants, Mr Shinji Takii
Nov 30 (Fri)	Visit to ANA food Co., LTD	All participants, staff Nodai, Dr Keiko
Dec 1 (Sat)	Travel to Tokyo	All participants
Dec 2 (Sun)	Travel to NODAI Atsugi campus	All participants
Dec 3 (Mon)	Introduction of entomology laboratory and its facilities	Dr Kojima and all participants
Dec 4 (Tue)	Weevils systematic and classification and practice identification.	Dr Kojima and all participiants
Dec 5 (Wed)	Visit to Fuji Flavor Co., LTD.	All participial and Mr Yutaka Tamadera, Kaneko Naoki.
Dec 6 (Thurs)	Practice for some Subfamily in laboratory	DrKojima and all participiants
Dec 7 (Fri)	Practice for some Subfamily in laboratory	Dr Kojima and all participants
Dec 8 (Sat)	Holiday	
Dec 9 (Sun)	Holiday	
Dec 10 (Mon)	Practice in laboratory	Dr Kojima and all participants

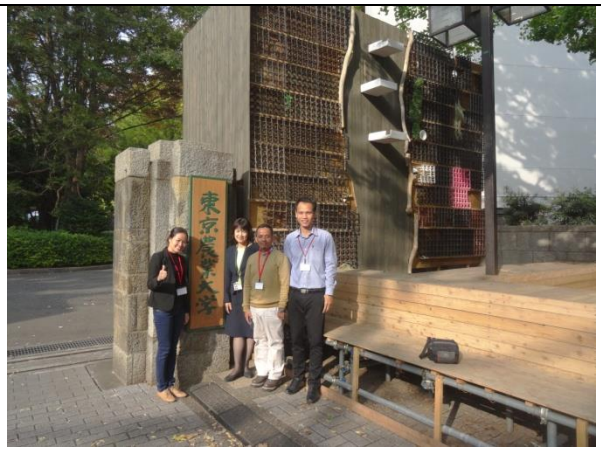
Date	Activities	Responsible Scientist(s)
Dec 11 (Tue)	Practice in laboratory	Dr Kojima and all participants
Dec 12 (Wed)	Visit to Kanagawa Prefecture Museum of Natural History	All participants, Mr TaruSoichiro, Mr Shimamoto Shusuke
Dec 13 (Thurs)	Preparation for presentations in laboratory	All participants, Dr Kojima
Dec. 14 (Fri.)	Presentations by participants on study at Atsugi	All participants & Kojima
Dec 15 (Sat)	Travel to Tokyo	All participants
Dec 16 (Sun)	Rest day	
Dec 17 (Mon.)	Preparation for presentation and report writing on the Attachment program in Japan	All participants &
Dec 18 (Tue.)	Nodai university Setagaya	
Dec 19 (Wed)	Departure of participants	

10. PHOTOS TAKEN DURING THE ATTACHMENT PROGRAM



Trainning at Atsugi (NODAI)

Training at Satagaya (NODAI)

Trainning at Kobe station

Trainning at Yokohama station

	
Field trips	