

# Update on Improved coordination and strengthened capacity to deal with the invasive insect pest *Phthorimaea absoluta* (*Tuta absoluta*) in mainland Southeast Asia

Project Identification Code: *AGF/CRO/20/012/REG*

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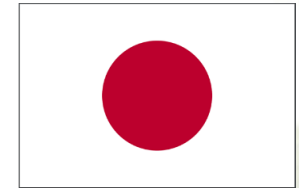


17th Steering Committee meeting of the ASEAN-AVRDC Regional Network for Vegetable Research and Development (AARNET)

29-30 May 2023, Brunei

## Project details

- **Funding Source:** Japan-ASEAN Integration Fund – EEA
- **Commencement Date:** 1 May 2021
- **Planned Completion Date:** 31 Mar 2022 (No-cost extension requested until March 31, 2023 due to COVID pandemic-related travel restrictions)
- **Completion Date:** 31 March 2023
- **Report Prepared By:** Paola Sotelo-Cardona
- **Date of Report Preparation:** April 1/2023; sent on April 25<sup>th</sup> together with financial reporting



# PROJECT RESULTS

## Direct Beneficiaries

- ✓ Two-week training was conducted in our East and Southeast Asia's Research and Training Station at Kasetsart University, Kamphaeng Saen, Thailand, December 4-17, 2022.
- ✓ WorldVeg hosted a total of 27 participants from the ten ASEAN countries (Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam)
- ✓ Training provided participants with strategies to recognize this insect pest, the importance of a proper phytosanitary process, sampling, inspection, monitoring, identification of main pathways for invasion, and management strategies after the pest arrival.
- ✓ Knowledge improvement of the participants measured with pre and post self-evaluations: participants gained 26-35% more knowledge in the tested subjects after the two weeks training.








Photo for the inaugural session with 27 participants from 10 ASEAN member states, resource people from WorldVeg (Dr. Sopana Yule, Ms. Somchit Pruangwitayakun, Ms. Chuanpit Khumsuwan, and Dr. Paola Sotelo-Cardona), Molecular biology consultant, Dr. Malini Periasamy, Dr. Sukanya Rattanabtimtong, Assistant to the President for Research, Innovation and international Affairs at Kasetsart University.



# Risk assessment and current status for each country

- ✓ Preparatory questions were shared with the participants before the arrival to the training
- ✓ Information was shared with other AMS participants as a power point presentation
- ✓ Baseline information for the development of the phytosanitary surveillance protocol for each country


**World Vegetable Center**



**Risk assessment and report on current status to control and monitor *Phthorimaea (Tuta) absoluta* and other potential invasive insect pests.**

Preparatory questions to be presented by each AMS December 13-16. You will be providing information as a powerpoint presentation with other AMS participants.

**Justification:** The information gathered during this part of the training is key for activity: "Develop a phytosanitary surveillance protocol for early detection of T. absoluta in target areas". The surveillance protocol will require to detail a proper identification of developmental stages, biological cycle, minimum temperature and climatic requirements, dispersal mode, target hosts, distribution, potential spread strategies, early detection in selected target areas [inspection of imported goods, tomato nurseries, commercial houses, shops, export checkpoints, packaging warehouse, international border crossings, host material, sampling sites (GPS, grid maps, etc.)], use of pheromone lures as traps, suggested trap locations and density, records of infested plants or positive records, control measures to be applied to prevent the spread of the pest after detection. The surveillance protocol will be designed based on particular requirements from each AMS and based on information provided by participants during the training activity. This activity will be led by WorldVeg and supported by participating AMS, where quarantine officers, and research and extension staff will need to provide technical inputs in terms of local data/conditions.

1. AMS:
2. Authors:
3. What are the major insect pests affecting tomato production in your country?
4. Has the presence of *Phthorimaea absoluta* been officially reported? If yes, please provide details.
5. Which are the regions where more tomatoes are produced in your country? Please provide details on area, growing season, location(s), mean data on temperature, rainfall, etc.
6. Where is the largest tomato production concentrated in your country? Is it in open field or greenhouse conditions? Please provide details.

7. What is the probability of *P. absoluta* entry to your country? Low, medium, high? Consider your answer based on potential suitable areas, environmental conditions, survival rate, pest management strategies, potential obstacles/barriers preventing establishment, etc.
8. Have you considered a dissemination scenario and how fast can *P. absoluta* spread in the tomato growing regions?
9. What yield losses can be expected?
10. What are the main approaches to control major insect pests in tomato?
11. Are you aware of how much pesticide is used for tomato production?
12. Do you consider the presence of *P. absoluta* may increase the application of pesticides?
13. Based on climatic conditions, what is the probability of establishment of field or greenhouse populations during tomato growing season? Unlikely, moderately likely, likely? Please provide more details
14. What is the probability of *P. absoluta* overwintering in some areas? Unlikely, moderately likely, likely? Please provide more details
15. What is the probability of damage to other solanaceous crops? For example, eggplants, potatoes? Unlikely, moderately likely, likely? Please provide more details
16. What is the probability of introduction as consequence of import plants for seedlings, fruits? Low, medium, high? Please provide more details
17. What is the probability of introduction as consequence of current production practices (packing-houses, pallets, packing materials, equipment, etc.) Low, medium, high? Please provide more details
18. What is the probability of introduction as consequence of trade with other countries? Low, medium, high? Please provide more details
19. What are the control measures to ensure insect-free tomato importation?





**Training agenda:** Theory and practical session on the morphological and molecular identification of *Phthorimaea absoluta*, risk assessment, development of surveillance protocols and IPM management

## Output:

Increased capacity of quarantine and plant protection officers to setup appropriate *P. absoluta* monitoring systems

## Indicators

27 quarantine officers, and research and extension staff of participating AMS trained on strategies to recognize *P. absoluta*, the importance of a proper phytosanitary process, inspection, monitoring, morphological and molecular identification of the insect, main pathways for invasion, and management strategies should the pest arrive.

Trained participants improved their knowledge and skill on *P. absoluta* monitoring system

The local phytosanitary surveillance strategies published and shared in high-risk areas by the AMS participants

A common platform established to share and discuss the surveillance results at regular intervals: Risk assessments, surveillance protocols, and powerpoint of all theoretical classes were shared with all participants

WorldVeg resource personnel keep active communication via WhatsApp group to provide technical support regarding pest identification



## Overall Project Assessment

1. A total of **27 participants** from 10 AMS participated in the two-week training conducted in our East and South East Asia's research and Training Station at Kasetsart University, Kamphaeng Saen, Thailand, from December 4-17, 2022.
2. A total of **10 country risk assessments** and **10 surveillance protocols** were developed by the AMS participants with the technical support from WorldVeg experts.
3. ***P. absoluta* pheromone lures** were provided for **five AMS**, Brunei Darussalam, Laos, Indonesia, Myanmar, and Singapore with **250 lures per country**, as the import permit is not required for these five countries.
4. **A demonstration IPM plot** for the control of *P. absoluta* was organized in order to provide technical support for the rapid response and strategies available once the insect pest is detected in any AMS.



## Financial analysis

	Planned	Actual	Variance
Total Project Revenue:	221,214.80	154,850.36	66,364.44
Other Contributions:	0	0	0
Total Eligible Project Costs:	221,214.80	127,357.14	93,857.66
Total Balance:	0	27,493.22	

### Documents attached to the completion report:

1. Risk assessment and current status of *P. absoluta*
2. Status of risk assessment per country
3. Development of phytosanitary surveillance protocols per country
4. Presentation and evaluation of the *P. absoluta* training