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Ministry of Agriculture, Forestry and Fisheries

CAPACITY DEVELOPMENT ON FRUIT FLY THROUGH JICA PROJECTS

IPPC International Symposium for
Pest Free Areas and Surveillance
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Shizuoka

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JICA Japan International Cooperation Agency

Japan International Cooperation Agency (JICA) is conducting international cooperation in developing countries as an implementation body that provides Japan's official development assistance (ODA) centrally.

https://www.jica.go.jp/english/about/index.html

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1. Technical Support for Survey on Fruit Flies Related to Mango Exported from Myanmar

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(1) Background

Myanmar government requested to Japan MAFF for technical cooperation for the lifting ban of exporting fresh mango fruit including providing technical guidance that is necessary to promote the export for fruits and vegetables

(2) Objectve

Identify needs for technical cooperation in plant quarantine area

Extend guidance to Fruit Fly WG (FFWG) on basic techniques for development of phytosanitary treatment

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Items of our activities

(a) Technical guidance to confirm fruit fly species that infest mangoes.

- Fruit fly survey; Trapping and host fruit collection

(b) Technical guidance on mass rearing of identified fruit flies.

- Providing advice on mass rearing for the disinfestation test that will be carried out in the future

(c) Technical guidance of mango fruit quality testing after heat treatment.

- Preliminary tests to check fruit quality of mangoes after hot water treatment

(3) Implementation detail

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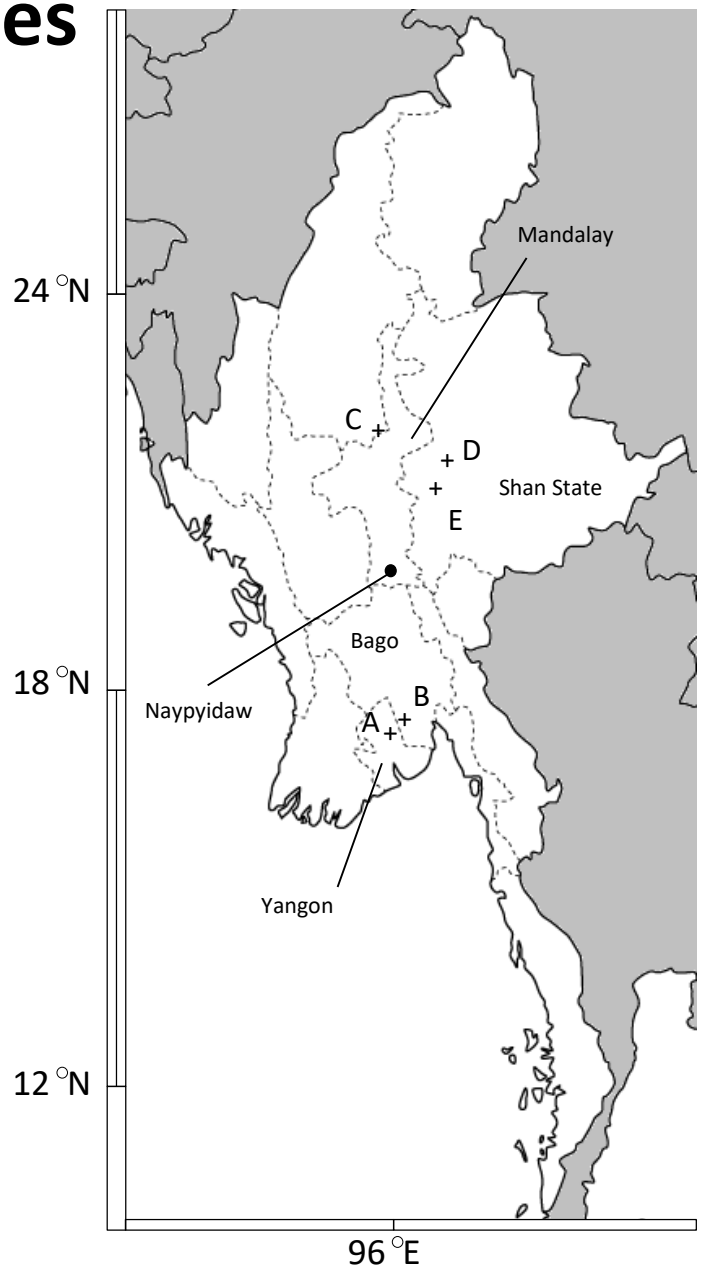
Location of the our activities

19 January – 22 February, 2014
11 May – 18 June, 2014

1. A: Yangon Region
   (2 orchards, PPD in Insein)
2. B: Bago Region
   (3 orchards)
3. C: Mandalay Region
   (8 orchards)
4. D: Shan state(Tawnggyi)
   (4 orchards)
   E: Shan state(Nyaung shwe)
   (3 orchards)



(3) Implementation detail

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(a) Technical guidance to confirm fruit fly species that infest mangoes

Fruit Fly Survey (Trapping)

Placing Trap for Fruit Flies in the field

Checking Trapped Fruit Flies

(3) Implementation detail

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(a) Technical guidance to confirm fruit fly species that infest mangoes

Fruit Fly Survey (Host fruits collection)

Infected mango Fruits Collection at Mandalay

Confirmation of Fruit Flies larvae in host fruits

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(a) Technical guidance to confirm fruit fly species that infest mangoes

Fruit Fly Survey (Identification)

(3) Implementation detail

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(a) Technical guidance to confirm fruit fly species that infest mangoes

The results of our survey were published on annual report of Plant protection station, Japan.

Res. Bull. Pl. Prot. Japan No. 54 : 61～68

Short Communication

Field Survey on Fruit flies (Diptera: Tephritidae) in Mango Orchards in Myanmar

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Abstract: A survey on fruit flies in Myanmar was conducted by the Japan International Cooperation Agency (JICA) in collaboration with the national governments of Myanmar and Japan in 2014. The objective of this survey was to acquire information on the *Bactrocera* fruit fly species present in Myanmar for possible phytosanitary concerns when mangoes are exported to other countries. In the survey, more than seventy thousand *Bactrocera* fruit fly specimens were collected from

(3) Implementation detail

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(b) Technical guidance on mass rearing of identified fruit flies.

Fruit Fly Rearing

Explanation of Temperature control

Explanation of Egging Device

(3) Implementation detail

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(c) Technical guidance of mango fruit quality testing after heat treatment.

Mango fruits Quality Testing after HWT

Meeting before the test

Sorting Test Fruits

Hot Water treatment

Water Cooling after HWT

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2. The training program: Practical Plant Quarantine Techniques for Export of Agricultural Products (Treatment for Disinfestation of Fruit Flies)

(1) Background

- *B.dorsalis* and *B.cucurbitae* once occurred in Okinawa and eradicated more than 20 years ago from Japanese territory.
- Host commodities in Okinawa were prohibited to move into the mainland of Japan.
- Vapor heat treatment technique was developed at Naha Plant Protection Station in Okinawa.
- Developing countries requested JICA and MAFF for technical cooperation.

(2) Objectives

- This program is designed for plant quarantine technician in developing countries to acquire effective knowledge and skills for developing phytosanitary treatment technique against fruit flies suited to respective conditions.

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Organizer and implementing organizations

- Japan International Cooperation Agency (JICA)
  JICA Okinawa International Center

- Japan Fumigation Technology Association (JAFTA)

- Ministry of Agriculture, Forestry and Fisheries, JAPAN(MAFF)
  Naha Plant Protection Station

JICA Okinawa

Naha PPS

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Outline of training program

Establishment : 1988 (32 years)
Training Period in Japan: 4 months (May-August)
Capacity: 6 participants

(3) Implementation detail

Subjects of the training program

- Morphology and taxonomy of fruit flies
- Physiology and ecology of fruit flies
- Genetic analysis of fruit flies
- Rearing method of fruit flies
- Disinfestation method of fruit flies
- Disinfestation tests by cold treatment and vapor heat treatment
- Fruit quality testing after vapor heat treatment
- Plant quarantine system in Japan

Lecture at Naha PPS


Practice at Naha PPS


Observation tour to the mainland

Practical Plant Quarantine Techniques for Export of Agricultural Products
(Treatment for Disinfestation of Fruit Flies)
42 Countries, 168 Participants

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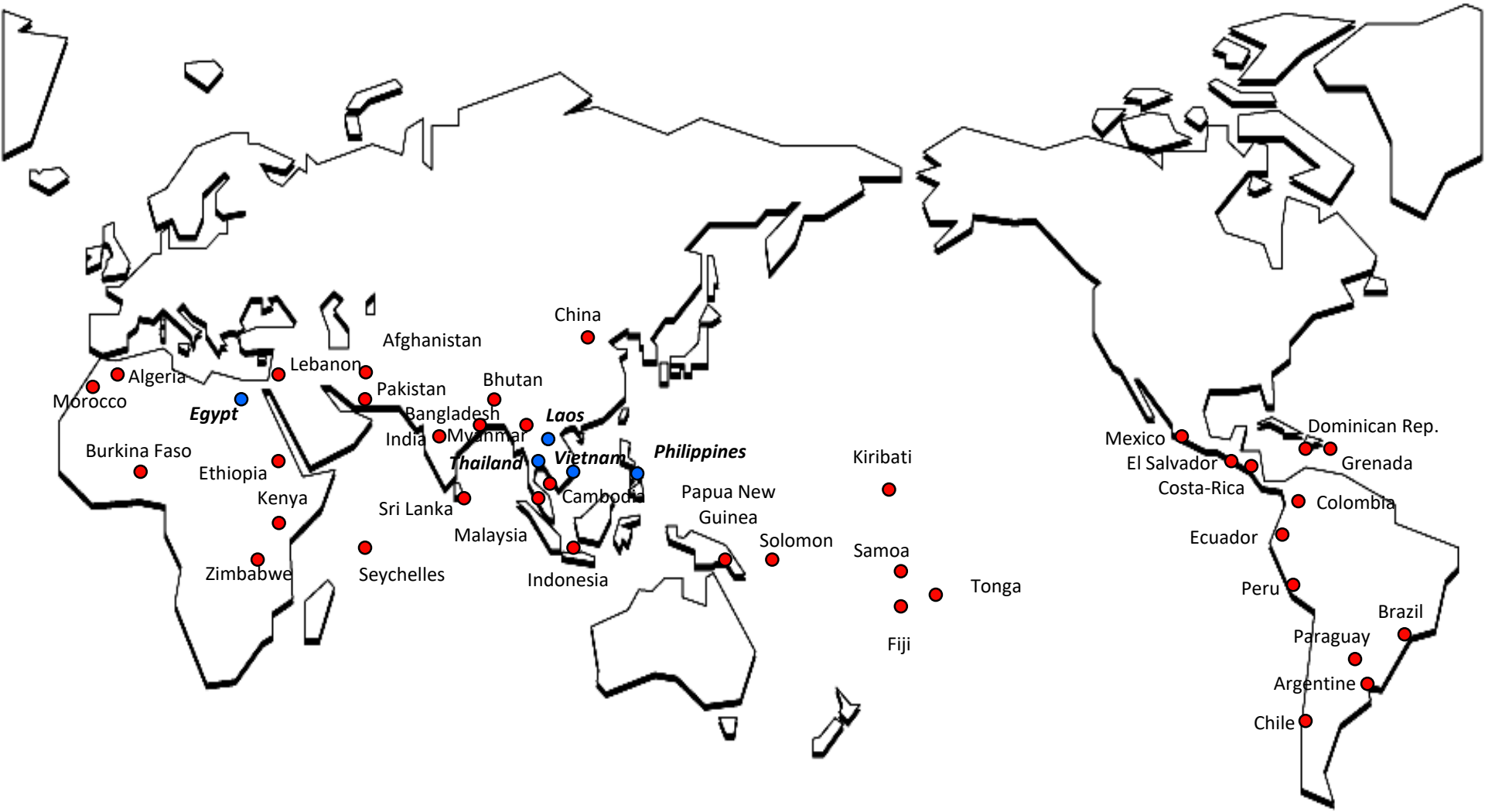

(3) Implementation detail

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Total of nine trainees attended the training program from Myanmar (2014～2017)

JAPAN

Myanmar

After they went back to their country, they are working on disinfestation test

(4) Lessons learned from our activities and Challenges in the future

(Possitive) Both dispatching experts and training in Japan effectively support technical skills on surveillance and treatment for fruit flies in developing countries which can promote market access. It also enhances knowledge and teaching skill of Japanese experts.

(Areas for improvement): It will be necessary for recipient countries to have adequate governmental structure and technical human resources to maintain and utilize the gained skills by themselves.

Needs identified for capacity development and implementation:

For capacity development of surveillance and treatment of fruit flies, it is also important to develop knowledge about biology, morphology, identification skill, mass-rearing method and ISPMs in relation to fruit flies.

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