



TRAINING AND DIALOGUE PROGRAMS

GENERAL INFORMATION ON

THERMAL TREATMENT FOR
THE DISINFESTATION OF FRUIT FLIES

集団研修「ミバエ類温度処理殺虫技術」

JFY 2009

<Type: Trainer's Training/ 類型:人材育成普及型>

No. J09-00672 /ID. 0980824

From February 2009 to February 2010

Phase in Japan : From May 12, 2009 to September 5, 2009

This information pertains to one of the Training and Dialogue Programs of the Japan International Cooperation Agency (JICA), which shall be implemented as part of the Official Development Assistance of the Government of Japan based on bilateral agreement between both Governments.

I. Concept

Background

With growing international society, trade of agricultural products becomes active and those markets tend to expand. It implies many developing countries where yield agricultural products as tropical fruits abundantly have enormous potentials to their economic development. However, in many of those countries, the complete disinfestation technique for harmful fruit flies on domestic agricultural products has not been developed yet. In view of the situation, to establish this technique gives opportunities for developing countries to participate in international trade of agricultural products that can be infested with fruit flies.

In this context, Japan which has advanced technology and experience in fruit fly disinfestation on fresh fruits implements technical training program to transfer its knowledge and skills to contribute development of the complete disinfestation technique which developing countries are required to achieve for exporting their agricultural products.

For what?

This program is designed for plant quarantine sections of central or local governments to disseminate effective and suitable techniques for plant quarantine to develop their knowledge and skills.

For whom?

This program is designed for those who in a position to be engineers for plant quarantine in national or local government, inspectors and officials for plant protection sections.

How?

To achieve the purpose, this program provides participants with the opportunity to acquire the knowledge and skills on thermal treatment for disinfestation of fruit flies on fresh fruits, and exchange information on plant quarantine system of participating countries and those of Japan.

II. Description

1. Title (J-No.):

Thermal Treatment for the Disinfestation of Fruit Flies

(J0900672, ID. 0980824)

2. Period of program:

Duration of whole program: February 2009 to February 2010

Preliminary Phase: February 2009 to May 2009

(in a participant's home country)

Core Phase in Japan: May 12, 2009 to September 5, 2009

Finalization Phase: September 2009 to February 2010

(in a participant's home country)

3. Target Regions or Countries:

Indonesia, Malaysia, Viet Nam, India, Mexico, Bolivia and Colombia

4. Eligible / Target Organization:

This program is designed for plant quarantine sections of central or local governments and related organizations for plant protection.

5. Total Number of Participants:

5 participants

6. Language to be used in this program: English

7. Program Objective:

This program is designed for plant quarantine engineers in countries infested with fruit flies to acquire quarantine treatment techniques suited to respective conditions.

8. Overall Goal:

The expertise to develop plant quarantine treatments for fruit flies which enable to participate international trade are improved and established the standards for treatments of complete disinfestation.

9. Expected Module Output and Contents:

This program consists of the following components. Details on each component are given below:

(1) Preliminary Phase in a participant's home country (February 2009 to May 2009) <i>Participating organizations make required preparation for the Program in the respective countries.</i>	
Expected Module Output	Activities
Job Report	Formulation and submission of Job Report in accordance with Annex.

(2) Core Phase in Japan (May 12, 2009 to September 5 2009) <i>Participants dispatched by the organizations attend the Program implemented in Japan.</i>		
Expected Module Output	Subjects/Agendas	Methodology
1 To be able to explain how to rear fruit flies in laboratories and how to make infested fruits for the disinfestation test.	1-1 Identification of fruit flies 1) Morphology and Taxonomy of fruit flies 2) Genetic analysis 1-2 Rearing of fruit flies 1) Ecology and rearing methods of fruit flies 2) Preparation of the Infested fruit 3) Larval development test	Lecture, Exercise and Discussion
2 To be able to explain the procedures of a series of thermal disinfestation tests and the methods of experimental data analysis.	2-1 Disinfestation methods on plant quarantine 2-2 Techniques of disinfestation test in heat and cold treatment 1) Susceptibility test 2) Disinfestation test for determination of treatment condition in vapor heat treatment 3) Method of data analysis in mortality test	Lecture, Exercise and Discussion

<p>3 To be able to explain the procedures of a series of fruit heat or chilling injury tests and the methods of experimental data analysis.</p>	<p>3-1 Techniques of fruit injury test</p> <ol style="list-style-type: none"> 1) Heat injury of fruit 2) Chilling injury of fruit 3) Method of data analysis in fruit injury test 4) Operation of vapor heat treatment system 5) Fruit injury test in vapor heat treatment 	<p>Lecture, Exercise and Discussion</p>
<p>4 To be able to explain the plant quarantine system and the eradication of fruit flies in Japan.</p>	<p>4-1 Plant Quarantine system in Japan 4-2 System of lifting import bans in Japan 4-3 Monitoring surveys for fruit flies 4-4 Eradication Techniques 4-5 Postharvest technology for fresh fruits 4-6 Japanese distribution system for imported agricultural commodities</p>	<p>Lecture, Observation and Discussion</p>
<p>5 To be able to explain about the problems of fruit flies in the participant's countries, and make an action plan for them.</p>	<p>5-1 Country report presentation 5-2 Formulation and presentation of Final report 5-3 Formulation and presentation of Action plan</p>	<p>Exercise, Presentation and Discussion</p>

<p>(3)Finalization Phase in a participant's home country <i>Participating organizations produce final outputs by making use of results brought back by participants. This phase marks the end of the Program.</i></p>	
<p>Expected Module Output</p>	<p>Activities</p>
<p>Formulation of the progress report</p>	<p>Application and implementation of the action plan back in the participant's country and submission of its progress report by March, 2010.</p>

<Structure of the program>

1. Preliminary phase (activities in your home country): Preparation of the Job Report.
2. Core Phase (activities in Japan):

Topic outline (subject to minor changes)

Abbreviation: L: Lecture, P: Practice, O: Other activity

1st week (12/May-)

- (1) O: Opening ceremony
- (2) O: General orientation on Japan (ex: Politics, Economics, Culture, and Education)

2nd week (18/May-)

- (1) O: Outline of Naha Plant Protection Station
- (2) L: Plant quarantine in Japan
- (3) L: Ecology and rearing methods of fruit flies
- (4) P: Preparation of the Infested fruit by egg inoculation and by natural oviposition (~3rd week)

3rd week (25/May-)

- (1) L: Morphology and taxonomy of fruit flies
- (2) L&P: Genetic analysis of insects

4th week (1/June-)

- (1) P: Larval development test (~5th week)
- (2) P: Calibration of the recorder's sensor

5th week (8/June-)

- (1) L: Introduction to quarantine disinfestation treatments
- (2) L: Disinfestation technique in fumigation and cold treatment
- (3) L: Operation of the vapor heat treatment system

6th week (15/June-)

- (1) L: Disinfestation technique in heat treatments
- (2) L: Mortality test and fruit injury test
- (3) L: Physiology and control methods of fruit flies
- (4) P: Distribution of fruit temperature according to the location in chamber during vapor heat treatment
- (5) P: Hot water dipping test (~7th week)

7th week (22/June-)

- (1) L: Postharvest technology of fruits
- (2) P: Temperature distribution within a fruit during vapor heat treatment

8th week (29/June-)

- (1) P: Susceptibility test in vapor heat treatment (~9th week)
- (2) P: Susceptibility test in cold treatment (~10th week)

9th week (6/July-)

- (1) O: Country report presentation
- (2) L: How to formulate an action plan

10th week (13/July-)

- (1) P: Disinfestation test to determine the treatment conditions in vapor heat treatment (~11th week)

11th week (20/July-)

(1) O: Observation tour to mainland Japan (~12th week)

12th week (27/July-)

(1) P: Fruit injury test in vapor heat treatment (~13th week)

13th week (3/August-)

(1) L: Entomology of fruit flies

(2) P: How to formulate an action plan

(3) L: Applied statistics

14th week (10/August-)

(1) L: Statistical analysis of test data

(2) How to make a technical report for disinfestation technology development

15th week (17/August-)

(1) P: Experimental practice on thermal treatment by participants

16th week (24/August-)

(1) O: Formulation Final report and Action plan (~17th week)

17th week (31/August-)

(1) O: Presentation and discussion of Final report and Action plan

(2) O: Evaluation, closing ceremony

3. Finalization Phase (activities in home country)

Participants are expected to implement the action plan and report on progress within six (6) months after the end of the phases in Japan.

III. Conditions and Procedures for Application

1. Expectations for the Participating Organizations:

- (1) This program is designed primarily for organizations that intend to address specific issues or problems identified in their operation. Participating organizations are expected to use the project for those specific purposes.
- (2) This program is enriched with contents and facilitation schemes specially developed in collaboration with relevant prominent organizations in Japan. These special features enable the project to meet specific requirements of applying organizations and effectively facilitate them toward solutions for the issues and problems.
- (3) As this program is designed to facilitate organizations to come up with concrete solutions for their issues, participating organizations are expected to make due preparation before dispatching their participants to Japan by carrying out the activities of the Preliminary Phase described in section II -9 .
- (4) Participating organizations are also expected to make the best use of the results achieved by their participants in Japan by carrying out the activities of the Finalization Phase described in section II -9.

2. Nominee Qualifications:

Applying Organizations are expected to select nominees who meet the following qualifications.

(1) Essential Qualifications

- 1) Current Duties: be engineers of plant quarantine treatment(s) (vapor heat, cold treatment, etc), inspectors and officials of plant protection sectors
- 2) Experience: have experience in the plant quarantine works and/or have sufficient knowledge about fundamental entomology such as fruit flies
- 3) Educational Background: be university graduate or equivalent
- 4) Language: have a good command of English enough to make an oral presentation and write a report
- 5) Health: must be in good health, both physically and mentally.
*Pregnancy is regarded to be disqualified because the participants are required to
 - a) undergo exhausting experimental practices which give participants burden works in slouchy position all day,
 - b) spend in the laboratory which treated strong stench materials as rotten fruits for practices.
- 6) Must not be serving any form of military service.

(2) Recommendable Qualifications

- 1)) Age: be under forty-six (46) years of age

3. Required Documents for Application:

- (1) **Application Form:** The Application Form is available at the respective country's JICA office or the Embassy of Japan.
- (2) **Job Report:** to be submitted with Application Form. Formulate the report in accordance with 'ANNEX' of this General Information.

***Remarks: Nominees are kindly required to typewrite Application Form and Job Report.**

4. Procedure for Application and Selection :

(1) Submitting the Application Documents:

Closing date for application to the JICA Center in JAPAN: **March 12, 2009**

Note: Please confirm the closing date set by the respective country's JICA office or Embassy of Japan of your country to meet the final date in Japan.

(2) Selection:

After receiving the document(s) through due administrative procedures in the respective government, the respective country's JICA office (or Embassy of Japan) shall conduct screenings, and send the documents to the JICA Center in charge in Japan, which

organizes this project. Selection shall be made by the JICA Center in consultation with the organizations concerned in Japan based on submitted documents according to qualifications. *The organization with intention to utilize the opportunity of this program will be highly valued in the selection.*

(3) Notice of Acceptance

Notification of results shall be made by the respective country's JICA office (or Embassy of Japan) to the respective Government by **not later than April 10, 2009**.

5. Conditions for Attendance:

- (1)** to observe the schedule of the program,
- (2)** not to change the program subjects or extend the period of stay in Japan,
- (3)** not to bring any members of their family,
- (4)** to return to their home countries at the end of the program in Japan according to the travel schedule designated by JICA,
- (5)** to refrain from engaging in political activities, or any form of employment for profit or gain,
- (6)** to observe the rules and regulations of their place of accommodation and not to change the accommodation designated by JICA,
- (7)** to participate the whole program including a preparatory phase prior to the program in Japan. Applying organizations, after receiving notice of acceptance for their nominees, are expected to carry out the actions described in section II -9, and
- (8)** to bring reading glasses for close observation

IV. Administrative Arrangements

1. Organizer:

(1) **Name:** JICA OKINAWA

(2) **Contact:** Training Program Division, JICA OKINAWA

E-mail: oictp@jica.go.jp

2. Implementing Partner:

Naha Plant Protection Station, Ministry of Agriculture, Forestry and Fisheries

3. Travel to Japan:

(1) **Air Ticket:** The cost of a round-trip ticket between an international airport designated by JICA and Japan will be borne by JICA.

(2) **Travel Insurance:** Term of Insurance: From arrival to departure in Japan. The traveling time outside Japan shall not be covered.

4. Accommodation in Japan:

JICA will arrange the following accommodations for the participants in Japan:

JICA Okinawa International Center (JICA OKINAWA)

Address: 1143-1 Aza-Maeda, Urasoe-Shi, Okinawa 901-2552, Japan

TEL: +81-98-876-6000 FAX: +81-98-876-6014

(where "81" is the country code for Japan, and "98" is the local area code)

If there is no vacancy at JICA OKINAWA, JICA will arrange alternative accommodations for the participants.

5. Expenses:

The following expenses will be provided for the participants by JICA:

(1) Allowances for accommodation, living expenses, outfit, and shipping

(2) Expenses for study tours (basically in the form of airtickets and/or train tickets).

(3) Free medical care for participants who become ill after arriving in Japan (costs related to pre-existing illness, pregnancy, or dental treatment are not included)

(4) Expenses for program implementation, including materials

For more details, please see p. 9-16 of the brochure for participants titled "KENSU-IN GUIDE BOOK," which will be given to the selected participants before (or at the time of) the pre-departure orientation.

6. Pre-departure Orientation:

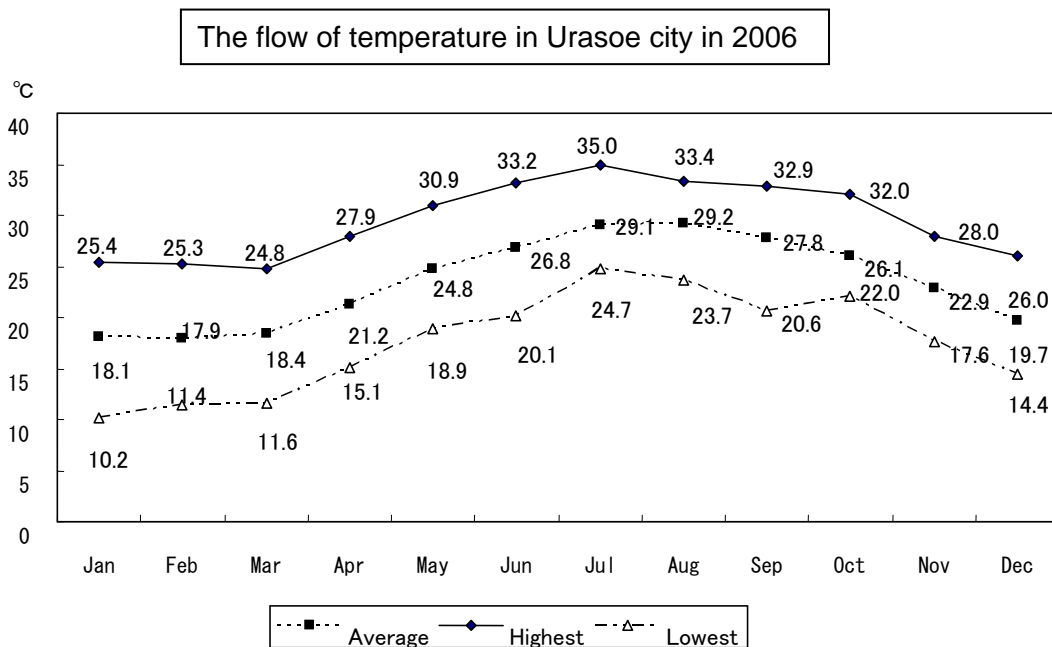
A pre-departure orientation will be held at the respective country's JICA office (or Embassy of Japan), to provide participants with details on travel to Japan, conditions of the workshop, and other matters.

V. Other Information

1. Climate in Okinawa:

Okinawa is located in sub-tropical zone (southern edge of Japan) however climate varies depending upon seasons. While it is hot as well as heavily humid in summer season (June through October), it becomes a bit chilly due to the strong windy in winter season (December through March). So, participants are recommended to bring suitable clothing (details are mentioned in below4.)

The following diagram is the flow of temperature in Urasoe city where JICA OKINAWA (or “Okinawa Kokusai Center” in Japanese) is located (Data source: <http://8761234.jp/kikaku/toukei/xls18/toti.xls>).



2. Main facilities in JICA OKINAWA:

JICA OKINAWA is equipped with a variety of facilities for training and welfare activities such as seminar rooms, a library, a computer room (connected to the Internet), accommodation rooms (details are mentioned in below 3.), a dining hall, a clinic for medical consultation, a gym, a tennis court, a play-ground, a swimming pool (available from May to October), a Japanese-style room for tea ceremony and a recreation room.

Supplementary, “HALAL” meals for the Muslim and vegetarian meals are available in the dining hall.

3. Accommodation in JICA OKINAWA:

JICA OKINAWA's accommodation building has three stories and 118 single rooms. Training participants basically use these single rooms. Every single room is furnished with a bed, a desk, a chair, a TV equipped with video, a DVD player, room lamps, a safety box, a bathroom and a telephone set which enables you to call inside JICA OKINAWA and receive all incoming calls including international calls.

Accommodation building is equipped with laundry room on each floor. And also washing machines and irons are available for free. However, towels and toiletries are not available and cooking facility is not equipped. Cooking in the room is strictly prohibited.

4. Outfit:

It is recommended to bring cool clothing for hot and humid season (May to September).

There are a few occasions like opening and closing ceremonies when training participants are kindly requested to wear formal clothing. Nevertheless, casual clothing is acceptable even during training hours of most of the training program.

It is welcomed to bring your national or traditional dress for cultural exchange activities that you are likely to join. And also any other items which may be used to exhibit your culture are welcomed (JICA OKINAWA has displays which introduce world culture to the visitors).

If your training program includes practices such as plant visit or outdoor activities, suitable uniform/clothing will be provided by JICA or a visiting site upon arrival.

5. Environmental conservation activities in JICA OKINAWA:

JICA OKINAWA emphasizes on the environmental conservation activities such as energy saving, rubbish separation and recycling etc. JICA OKINAWA has been certified ISO14001 (International Organization for Standardization) since Oct, 2004 and renewed it in Oct, 2007. ISO 14001 is the international specification for an environmental management system. Therefore, training participants are also kindly requested to cooperate to these activities during stay in JICA OKINAWA. Details are instructed by a staff member of JICA OKINAWA at beginning of the training program.

6. Activities out of training program:

JICA OKINAWA offers a various kinds of welfare activities for the participants such as a home-stay program to the local family, exposition of Japanese/Okinawa traditional cultures and Japanese language/conversation classes etc. Training participants can try any of them whenever sheets are available.

7. For your Information:

Information of Okinawa is available at following URLs.

(1) HP of Urasoe city: <http://www.8761234.jp/kokusai/english/index.html>

Basic information of Urasoe city is covered in English.

(2) HP of Okinawa Prefecture: <http://www.pref.okinawa.jp/english/index.html>

Basic information of Okinawa prefecture is covered (Urasoe city is one of the municipalities of Okinawa prefecture) in English.

(3) HP of Okinawa Convention & Visitors Bureau:

http://www.ocvb.or.jp/index.php?current=General_Page&action=Top_Page&mode=isel&lang=en

More information is available at the reception of JICA OKINAWA.

VI. ANNEX:

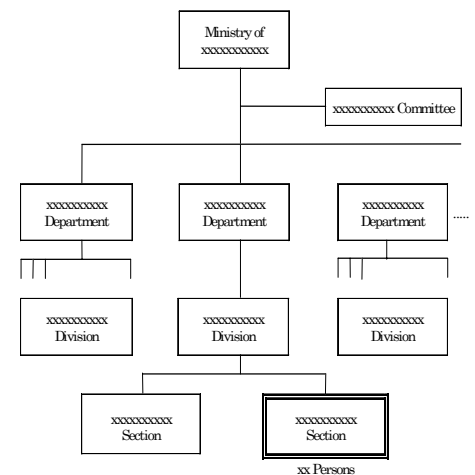
The Instruction of Job Report

Applicants are requested to prepare a Job Report and submit it with the Application Form. As this Report will be used for screening purpose, it should be typewritten in English, in less than 10 pages (12 fonts, double space on A4 size paper). This Report will also be used in the training as a starting point for discussion on common and particular problems. The items to be covered in the report are as follows.

The Application Form without this report is excluded from the selection.

Organization Chart Example

- 1) Name of applicant/ Organization
- 2) Roles and responsibilities of your organizations
- 3) Organization Chart
Referring to the example, draw the chart of your organization and indicate your department / division / section with double line.
- 4) Outline of the fruit industry in general (area, item, amount, exportation / importation, and the required plant quarantine treatment from importing country)
- 5) Outline of the present situation of plant quarantine and distribution, control, artificial rearing, disinfestation of fruit flies
- 6) A list of other research organizations regarding plant quarantine and fruit flies, their roles and responsibilities (identification, monitor and research of fruit flies, etc.)
- 7) Problems on plant quarantine
- 8) Outline of the pests, including fruit flies, that are causing agricultural problems in the applicant's country.
- 9) Outline of the invasive pests, including fruit flies, existing in the applicant's country.
- 10) Outline of the methods practically used for warning against invasions by pests, including fruit flies, in the applicant's country.



Materials such as slides and photographs, digital data are also recommended, as these will be very helpful in Country report presentation described in section II -9.

* Applicant's height and weight

Applicants are requested to notify their height (cm) and weight (kg) together with the application form for preparing a lab coat used in the laboratory.

For Your Reference

JICA and Capacity Development

The key concept underpinning JICA operations since its establishment in 1974 has been the conviction that “capacity development” is central to the socioeconomic development of any country, regardless of the specific operational scheme one may be undertaking, i.e. expert assignments, development projects, development study projects, training programs, JOCV programs, etc.

Within this wide range of programs, Training Programs have long occupied an important place in JICA operations. Conducted in Japan, they provide partner countries with opportunities to acquire practical knowledge accumulated in Japanese society. Participants dispatched by partner countries might find useful knowledge and re-create their own knowledge for enhancement of their own capacity or that of the organization and society to which they belong.

About 460 pre-organized programs cover a wide range of professional fields, ranging from education, health, infrastructure, energy, trade and finance, to agriculture, rural development, gender mainstreaming, and environmental protection. A variety of programs and are being customized to address the specific needs of different target organizations, such as policy-making organizations, service provision organizations, as well as research and academic institutions. Some programs are organized to target a certain group of countries with similar developmental challenges.

Japanese Development Experience

Japan was the first non-Western country to successfully modernize its society and industrialize its economy. At the core of this process, which started more than 140 years ago, was the “*adopt and adapt*” concept by which a wide range of appropriate skills and knowledge have been imported from developed countries; these skills and knowledge have been adapted and/or improved using local skills, knowledge and initiatives. They finally became internalized in Japanese society to suit its local needs and conditions.

From engineering technology to production management methods, most of the know-how that has enabled Japan to become what it is today has emanated from this “*adoption and adaptation*” process, which, of course, has been accompanied by countless failures and errors behind the success stories. We presume that such experiences, both successful and unsuccessful, will be useful to our partners who are trying to address the challenges currently faced by developing countries.

However, it is rather challenging to share with our partners this whole body of Japan’s developmental experience. This difficulty has to do, in part, with the challenge of explaining a body of “tacit knowledge,” a type of knowledge that cannot fully be expressed in words or numbers. Adding to this difficulty are the social and cultural systems of Japan that vastly differ from those of other Western industrialized countries, and hence still remain unfamiliar to many partner countries. Simply stated, coming to Japan might be one way of overcoming such a cultural gap.

JICA, therefore, would like to invite as many leaders of partner countries as possible to come and visit us, to mingle with the Japanese people, and witness the advantages as well as the disadvantages of Japanese systems, so that integration of their findings might help them reach their developmental objectives.



CORRESPONDENCE

For enquiries and further information, please contact the JICA office or the Embassy of Japan. Further, address correspondence to:

JICA Okinawa International Center (JICA OKINAWA)

Address: 1143-1 Aza-Maeda, Urasoe-Shi, Okinawa, 901-2552, Japan

TEL: +81-98-876-6000 FAX: +81-98-876-6014