



Knowledge Co-Creation Program (Group & Region Focus)

GENERAL INFORMATION ON

THERMAL TREATMENT FOR DISINFESTATION OF FRUIT FLIES 課題別研修「ミバエ類温度処理殺虫技術」 JFY 2016

NO. J1604341/ ID. 1684724

Program Period in Japan: From May 11th, 2016 to September 5th, 2016

This information pertains to one of the JICA Knowledge Co-Creation Program (Group & Region Focus) 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.¹

'JICA Knowledge Co-Creation Program (KCCP)' as a New Start

In the Development Cooperation Charter which was released from the Japanese Cabinet on February 2015, it is clearly pointed out that *"In its development cooperation, Japan has maintained the spirit of jointly creating things that suit partner countries while respecting ownership, intentions and intrinsic characteristics of the country concerned based on a field-oriented approach through dialogue and collaboration. It has also maintained the approach of building reciprocal relationships with developing countries in which both sides learn from each other and grow and develop together."* We believe that this 'Knowledge Co-Creation Program' will serve as a center of mutual learning process.

I. Concept

Background

In view of growing international trade and expanding market of agricultural products, many developing countries which yield agricultural products such as tropical fruits have enormous potentials for further 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. It is expected that establishing the technique for disinfestation of fruit flies gives opportunities for developing countries to participate in international trade of agricultural products.

In this context, Japan, which has advanced technology and experience in fruit flies disinfestation in fresh fruits, organizes a technical training program to transfer its knowledge and skills to developing countries which seek to expand export of tropical fruits.

For what?

This program is designed for plant quarantine division 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 plant quarantine engineers of national or local governments, inspectors and officials for plant protection division.

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 in 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 Disinfestation of Fruit Flies J1604341

2. Program Period in JAPAN

May 11, 2016 to September 5, 2016

3. Target Regions or Countries

Myanmar, Sri Lanka and Peru

4. Eligible / Target Organization

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

5. Course Capacity (Upper limit of Participants)

6 participants

6. Language to be used in this program

English

7. Course 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 will be improved and the standards for treatments of complete disinfestation will be established.

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 (April 2016 to September 2016) <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-1.

(2) Core Phase in Japan (May 16, 2016 to September 3, 2016) <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 or 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
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.	3-1 Techniques of fruit injury test (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	Lecture, Exercise and Discussion

4 To be able to explain the plant quarantine system and the eradication of fruit flies in Japan.	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	Lecture, Observation and Discussion
5 To be able to explain about the problems of fruit flies in the participant's countries, and make presentation materials for the spread of the knowledge and techniques.	5-1 Country Report presentation 5-2 Formulation and presentation of Final Report	Exercise, Presentation and Discussion

5-1 Country report presentation

Participants are requested to present a Country Report which summarize the quarantine system as well as major pest insects and diseases, and etc. The items to be covered in the report are as follows.

1. Country profile (Geography, culture, custom, industrial activities)
2. Plant quarantine system
3. Your organization
4. Agricultural products, major crops
5. Major commodities for import and export
6. Major quarantine pest insects and diseases which haven't occurred but your country gives warning.
7. Serious pests, insects and diseases in your country
8. Fruit fly species that distributed in your country
9. Major quarantine control measures
10. Problems with plant quarantine or / and your organization
11. Expectation for this program(what technique do you intend to learn in Japan and how do you implement it in your country)

Note:

- The Country Report should be made in MS PowerPoint.
- Participants are requested to prepare photographs, images or statistical data, etc in order to use and explain for the report before coming to Japan.
- The report will be started to make after starting the program.
- The details of the items as below will be informed when participants make the report

5-2 Final report

Participants are requested to prepare a Final Report. The report includes the outline of the course.

<Structure of the program>

1. Preliminary phase (activities in participants' home country):
Preparation of a Job Report.

2. Core Phase (activities in Japan):

Topic outline (subject to minor changes)

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

1st week (11/May-)

- (1) O: Briefing on procedural matter
- (2) O: General orientation on Japan (ex: Politics, Culture, and Education)

2nd week (16/May-)

- (1) O: Opening Ceremony
- (2) Courtesy visit to Urasoe city or Prefectural government is scheduled
- (3) O: Outline of Naha Plant Protection Station
- (4) L: Plant quarantine in Japan
- (5) L: Ecology and rearing methods of fruit flies
- (6) P: Preparation of the infested fruit by egg inoculation and natural oviposition (~3rd week)

3rd week (23/May-)

- (1) L&O: Eradication and Control of fruit flies
- (2) L: Morphology and Taxonomy of fruit flies
- (3) O: Formulation of final report and presentation materials to share the knowledge and techniques learnt in the training with participating organization.

4th week (30/May-)

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

5th week (6/June-)

- (1) L: Outline of quarantine disinfestation treatments
- (2) L&O: Disinfestation technique in fumigation
- (3) L: Operation of the vapor heat treatment system
- (4) P: Detection of the most sensitive point of recorder's sensor

6th week (13/June-)

School visit and exchange program are scheduled.

- (1) L: Disinfestation technique in heat and cold treatments
- (2) L: Mortality test and fruit injury test
- (3) P: Distribution of fruit temperature according to the location in chamber during vapor heat treatment

7th week (20/June-)

- (1) P: Temperature distribution within a fruit during vapor heat treatment
- (2) P: Naked insect susceptibility test in hot water treatment
- (3) O: Formulation of final report

8th week (27/June-)

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

9th week (4/July-)

- (1) P: Disinfestation test in hot water treatment(~10th week)
- (2) L: Ethology and Physiology of fruit flies
- (3) O: Country report presentation

10th week (11/July-)

- (1) P: Disinfestation test to determine the treatment conditions in vapor heat treatment(~11th week)
- (2) O: Formulation of final report
- (3) O: Observation tour to northern Okinawa

11th week (19/July-)

- (1) P: Fruit injury test in vapor heat treatment(~12th week)
- (2) L: Applied statistics

12th week (25/July-) & 13th week (1/August-)

- (1) O: Formulation of final report
- (2) O: Observation tour to mainland Japan

14th week (8/August-) & 15th week (15/August-)

- (1) P: Experimental practice on thermal treatment by participants (~16th week)
- (2) L: Postharvest technology of fruits
- (3) L: Formulation and design of test plan.
- (4) L: How to make a technical report for disinfestation technology development

16th week (22/August-)

- (1) O: Formulation of final report and presentation materials (17th week)
- (2) L&P: Genetic analysis of insects

17th week (29/August-)

- (1) O: Final presentation and discussion
- (2) O: Evaluation meeting
- (3) Closing Ceremony

III. Conditions and Procedures for Application

1. Expectations from 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) In this connection, applying organizations are expected to nominate the most qualified candidates to address the said issues or problems, carefully referring to the qualifications described in section III-2 below.
- (3) Applying organizations are also expected to be prepared to make use of knowledge acquired by the nominees for the said purpose.
- (4) This program is enriched with contents and facilitation schemes specially developed in collaboration with relevant prominent organizations in Japan. These special features enable the program to meet specific requirements of applying organizations and effectively facilitate them toward solutions for the issues and problems.

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 to participate in the Program in Japan

***Remarks on eye conditions**

The course contains a long series of experimental practice in the laboratory. During the practice, Participants need to examine a number of tiny eggs and larva of fruit flies with/without microscope and count them accurately. Thus, healthy eye condition is essential to complete the course. Those who have eye problems such as myopia, astigma, and farsighted are strongly requested to bring their glasses.

***Remarks on Pregnancy**

Participants who are pregnant will have difficulties 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- five (45) years of age

3. Required Documents for Application

- (1) **Application Form:** The Application Form is available at **the JICA office (or the Embassy of Japan).**

***Pregnancy**

Pregnant participants are strictly requested to attach the following documents in order to minimize the risk for their health.

1. letter of the participant's consent to bear economic and physical risks
2. letter of consent from the participant's supervisor
3. doctor's letter with permission of her training participation.

Please ask JICA staff for the details.

- (2) **Photocopy of passport:** to be submitted with the application form, if you possess your passport which you will carry when entering Japan for this program. If not, you are requested to submit its photocopy as soon as you obtain it.

*Photocopy should include the followings:

Name, Date of birth, Nationality, Sex, Passport number and Expire date.

- (3) **Job Report:** to be submitted with Application Form. Formulate the report in accordance with 'ANNEX-1' of this General Information.
- (4) **Questionnaire:** to be submitted with the application form. Fill in ANNEX-2 of this General Information.

4. Procedures for Application and Selection:

(1) Submission of the Application Documents:

Closing date for applications: **Please inquire to the JICA office (or the Embassy of Japan).**

(After receiving applications, the JICA office (or the Embassy of Japan) will send them to **the JICA Center in JAPAN by March 18, 2016**)

(2) Selection:

After receiving the documents through proper channels from your government, the JICA office (or the embassy of Japan) will conduct screenings, and then forward the documents to the JICA Center in Japan. Selection will be made by the JICA Center in consultation with concerned organizations in Japan. *The applying organization with the best intention to utilize the opportunity of this program will be highly valued in the selection.*

(3) Notice of Acceptance

Notification of results will be made by the JICA office (or the Embassy of Japan) **not later than March 25, 2016.**

5. Conditions for Attendance:

- (1) to strictly adhere to the program schedule.
- (2) not to change the program topics.
- (3) not to extend the period of stay in Japan.
- (4) not to be accompanied by family members during the program.
- (5) to return to home countries at the end of the program in accordance with the travel schedule designated by JICA.
- (6) to refrain from engaging in any political activities, or any form of employment for profit or gain.
- (7) to observe Japanese laws and ordinances. If there is any violation of said laws and ordinances, participants may be required to return part or all of the training expenditure

depending on the severity of said violation.

- (8) to observe the rules and regulations of the accommodation and not to change the accommodation designated by JICA.

IV. Administrative Arrangements

1. Organizer:

(1) **Name:** JICA OKINAWA

(2) **Contact:** Partnership Program Division

Mr. OSHIRO Haruki (Oshiro.Haruki@jica.go.jp)

2. Implementing Partner:

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

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:** Coverage is from time of arrival up to departure in Japan. Thus traveling time outside Japan will 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, meals, living expenses, outfit, and shipping

(2) Expenses for study tours (basically in the form of 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 "III. ALLOWANCES" of the brochure for participants titled "KENSU-IN GUIDE BOOK," which will be given before departure for Japan.

6. Pre-departure Orientation:

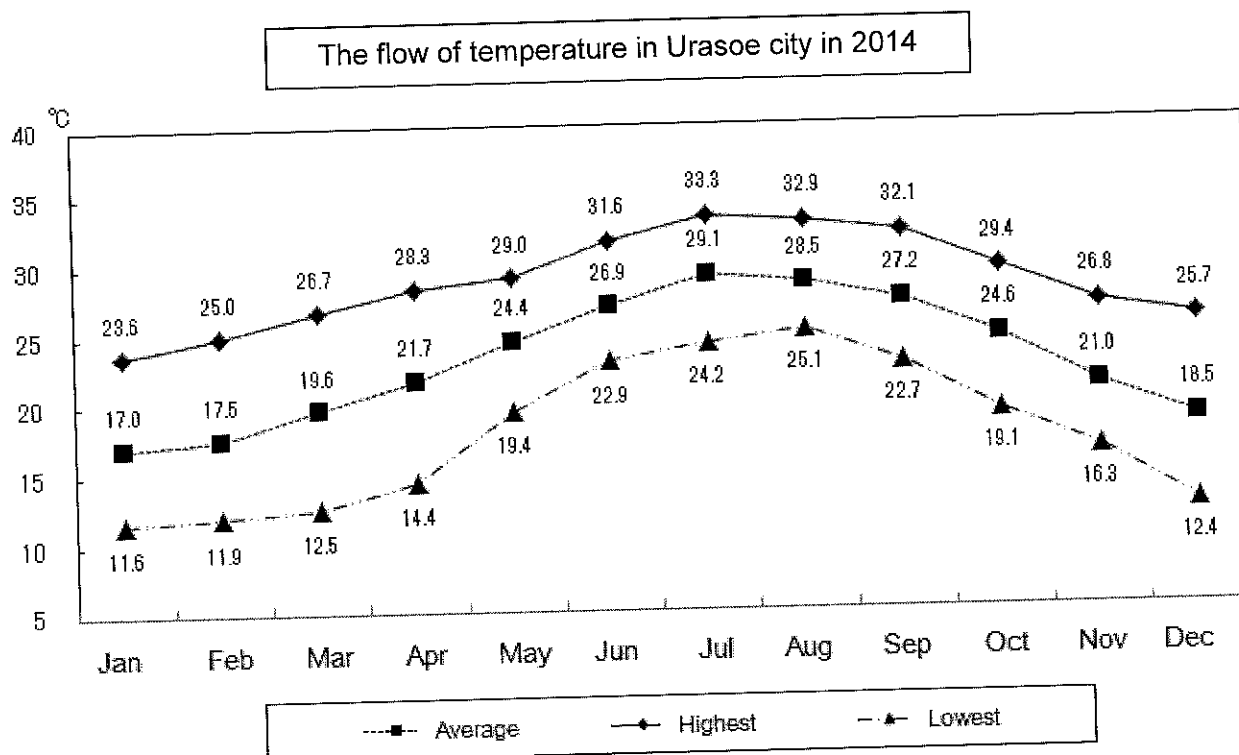
A pre-departure orientation will be held at the respective country's JICA office (or Japanese Embassy), to provide participants with details on travel to Japan, conditions of the workshop, and other matters.

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 below 4.)

The following diagram is the flow of temperature in Urasoe city where JICA Okinawa (or “Okinawa Kokusai Center” in Japanese) is located (Data source: the home page of Urasoe City).



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.

“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. Clothing:

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 opening & closing ceremony and cultural exchange activities that you may have opportunities 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. 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 regarding Okinawa is available at the following URLs.

(1) Homepage of Urasoe city:

http://honyaku.j-server.com/LUCURASOEC/ns/tl.cgi/http%3A//honyaku.j-server.com/LUCURASOEC/ns/warning_mess4.cgi?url=http%3a//www.city.urasoe.lg.jp/&target=top&SLANG=ja&TLANG=en&XMODE=0&XJSID=0

Basic information regarding Urasoe city is provided in English. (Urasoe City, where JICA OIC is located, is one of the municipalities of Okinawa Prefecture)

(2) Homepage of Okinawa Prefecture:

<http://www.pref.okinawa.lg.jp/site/chijiko/kohokoryu/foreign/english/index.html>

Basic information regarding Okinawa prefecture is covered in English.

(3)Homepage of the Okinawa Convention & Visitors Bureau:

<http://www.ocvb.or.jp/foreign/en>

More information is available at the reception of JICA OKINAWA.

VI. ANNEX:

ANNEX-1

The Instruction of a Job Report

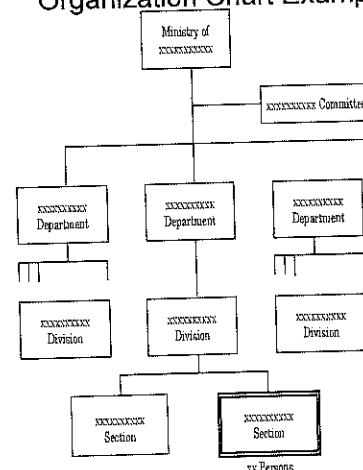
Applicants are requested to prepare a Job Report and submit it with the Application Form. As this Report will be used for screening purpose, it should be computer-printed in English, in less than 10 pages (12 fonts, double space on A4 size paper), not handwritten. This Report will also be used in the training as a starting point for discussion on common and particular problems.

It is preferable that the participants and his/her superior discuss the objective of organization as well as expectation to the participants before participants arrive in Japan. Please submit a Job report which was consulted with the superior. The items to be covered in the report are as follows.

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

- 1)Name of applicant/ Organization
- 2)Education & Job record
- 3) Roles and responsibilities of your organizations
- 4) Organization Chart
Referring to the example, draw the chart of your organization and indicate your department / division / section with double line.
- 5) Outline of the fruit industry in general (area, item, amount, exportation / importation, and the required plant quarantine treatment from importing country)
- 6) Outline of the present situation of plant quarantine and distribution, control, artificial rearing disinfection of fruit flies
- 7) Outline the export plan of fruit
- 8) A list of other research organizations regarding plant

Organization Chart Example



quarantine and fruit flies, their roles and responsibilities
(identification, monitor and research of fruit flies, etc.)

- 9) Problems on plant quarantine or / and your organization
- 10) Outline of the pests, including fruit flies, which causes damages on agricultural products in the applicant's country.
- 11) Outline the subjects or topics in the program that the participants are interested in.
- 12) Remark by the supervisor of the applicant.

The supervisor of the applicant is requested to describe his/her expectation to the applicant, in particular, expectation regarding the role applicant will play after the training in Japan.

ANNEX-2

QUESTIONNAIRE

Applicants are required to submit the questionnaire with Application Form and Job Report.

Q1. Your name and country

()

This course contains a long series of experimental practice in the laboratory. During the practice, participants need to examine a number of tiny eggs and larva of fruit flies with/without microscope and count them accurately.

Q2. Do you have enough eyesight to conduct above experiments? (with glasses if needed)

() yes () no

For our preparation of a white lab coat for you in the laboratory, please select your lab coat size from the list below.

Q3. Your lab coat size. If you cannot find your size, please write your size of each column on the list below.

()

Lab coat size (cm) for **male**

Lab coat size	Chest measurement	Length of clothes	Shoulder width	Sleeve length
Male-S	109	100	42	55
Male-M	114	105	44	56
Male-L	119	110	46	58
Male-LL	124	115	47	60
Male-3L	134	110	49	58

Lab coat size (cm) for **female**

Lab coat size	Chest measurement	Length of clothes	Shoulder width	Sleeve length
Female-S	100	95	39	55
Female-M	104	100	40	55
Female-L	108	105	41	57
Female-LL	115	110	42	59

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

