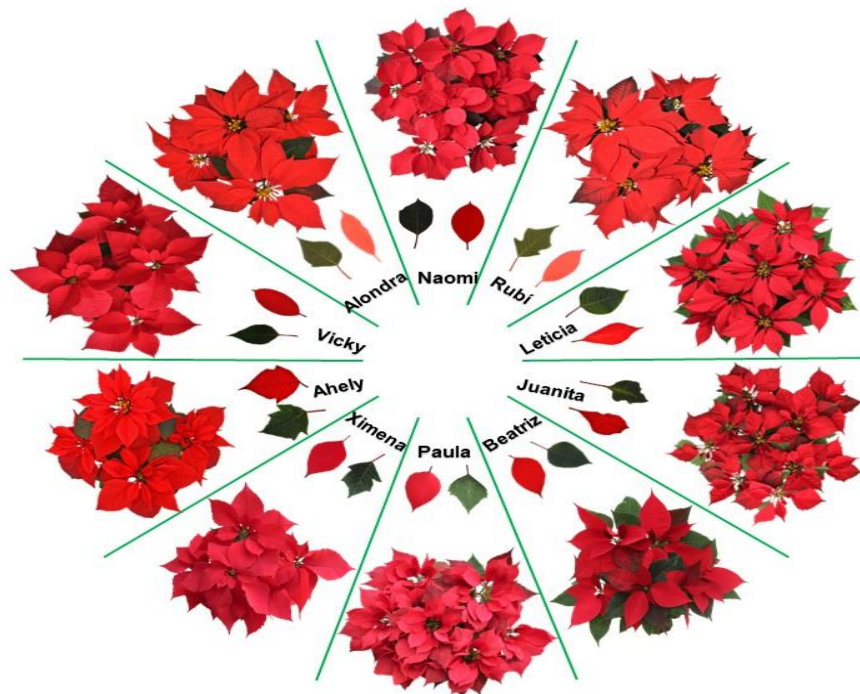




Technical summary of the Cooperation Program for the Training of Human Resources in the Global Strategic Partnership México–Japón, Nichiboku

# SCIENTIFIC BASES FOR THE BREEDING OF POINSETTIA AND APPLICABLE STRATEGIES FOR THE GENERATION OF NEW CULTIVARS



**INIFAP CIRPAS, ZACATEPEC  
EXPERIMENTAL FIELD, MORELOS**

Work program, September 22 – September 28 2026



## Background

### Course Title

Scientific bases for the breeding of poinsettia and applicable strategies for the generation of new cultivars.

### Course Objectives

Make known the scientific bases of poinsettia breeding, as well as the different strategies that can be adapted for the species.

### Goal

Provide participants with the theoretical foundations of the genetic improvement of cultivated species case poinsettia, as well as classic genotechnical methods such as hybridization, selection, mutagenesis, among others.

### Expected results

At the end of the training, students are expected to have the basic scientific knowledge of genetic improvement on poinsettia, as well as the necessary tools to analyze the information that is generated. In addition, the different strategies that can be applied on Christmas Eve, which will allow the generation of new varieties.

It is important to note that the training will be completely theoretical because in the month of March there are still no poinsettia plants. The crop cycle is from May to December.

### ¿For whom it is?

The training is aimed at undergraduate students in careers related to biology, botany, statistics, agronomy and genetics.



## **I. Training Course Description**

Participants will be provided with the theoretical foundations of classical genetic improvement specifically on aspects of hybridization, selection, mutagenesis, among others. Knowledge about germplasm collection and its characterization based on morphological markers will also be taught. The constitution of a core collection for the formation of a germplasm bank. The sexual and asexual propagation of poinsettia. Strategies to support genetic improvement such as the formation of archetypes and grafting. Finally, the varietal description and the registration process of poinsettia varieties.

## **II. General Information**

### **Course period**

September 22 – September 28 2026

### **Course Delivery Location**

INIFAP CIRPAS- Zacatepec Experimental Field, located at Km 0.5 of the Zacatepec-Galeana highway, in the municipality of Zacatepec de Hidalgo, Morelos, Mexico.

### **Language**

This training will be carried out in English language.

### **Modality**

Classroom course

### **Capacity (Maximum number of participants)**

5 scholarship participants



### **III. Eligibility**

#### **1. Expectations towards participants**

Interested students are expected to have the following skills and abilities:

- Commitment to the topic: that they show interest in genetic improvement of cultivated species such as poinsettia.
- Previous knowledge: in biology, botany, agronomy, statistics and principles of genetics.
- Presentation of achievements: at the end of the training the student will have sufficient tools to carry out genetic improvement in ornamental species.

#### **2. Requirements for candidates**

Those interested in the training topic must meet the following requirements.

1. Bachelor's level students in careers related to biology, botany, statistics, genetics and agronomy.
2. Health: The candidate must be in good health, both physically and mentally, to be considered for this training program.
3. Language: English
4. Enthusiasm to generate new varieties and genetic diversity.
5. Be a participatory student.

#### **3. Participation Conditions**

Participants must:

1. Have the acceptance letter.
2. The training will take place at the Zacatepec Experimental Field, state of Morelos.
3. Respect the training calendar and schedule.



4. Follow the trainer's instructions and comply with the institution's standards of conduct.

## **IV. Information about the Training Center**

The Zacatepec Experimental Field has an area of 25 hectares. The facilities available are laboratories, offices and researcher cubicles, as well as spaces for students. There is internet and telephone service. It has greenhouses, shade mesh and land to establish the different experiments.

The research is carried out on the following crops: rice, sugar cane, corn, poinsettia and tomatoes, mainly. Topics such as beneficial organisms, pests and diseases of different crops are addressed.

The research staff is highly trained to carry out frontier research.

### **Additional important information**

1. Bring appropriate clothing for going out into the countryside (long-sleeved shirt, closed shoes or comfortable boots for walking, cap/hat, repellent, sunscreen).
2. Since the weather in Morelos at that time is hot (30-35° C), it is recommended to bring comfortable and cool clothing.
3. It is recommended to bring medications for your health/allergy care.

**SECRETARY OF AGRICULTURE AND RURAL DEVELOPMENT**

**MEXICAN AGENCY FOR INTERNATIONAL COOPERATION FOR DEVELOPMENT**

**NATIONAL INSTITUTE OF FOREST, AGRICULTURAL AND LIVESTOCK RESEARCH**

**BILATERAL COOPERATION PROJECT:**

**COOPERATION PROGRAM FOR THE TRAINING OF HUMAN RESOURCES IN THE  
MEXICO-JAPAN GLOBAL STRATEGIC PARTNERSHIP: NOCHIBOKU PROGRAM**

**MEXICO - JAPAN**

**TRAINING AND TECHNICAL ASSISTANCE:**

**SCIENTIFIC BASES FOR THE BREEDING OF POINSETTIA AND APPLICABLE  
STRATEGIES FOR THE GENERATION OF NEW CULTIVARS**

**EXECUTING INSTITUTION:**

**NATIONAL INSTITUTE OF FORESTRY, AGRICULTURE AND LIVESTOCK RESEARCH  
(INIFAP)**

**MODALITY AND PLACE OF TRAINING:**

**Short courses  
Internship (Japan)  
Advisory (Mexico)**



PERIOD:

SEPTEMBER 22, 2026SEPTEMBER 28, 2026

## WORK PROGRAM

# SCIENTIFIC BASES FOR THE BREEDING OF POINSETTIA AND APPLICABLE STRATEGIES FOR THE GENERATION OF NEW CULTIVARS

### INTRODUCTION

The poinsettia (*Euphorbia pulcherrima* Willd. ex Klotzsch) has its center of origin in Mexico, and origin center in the states of Guerrero and Morelos; however, it is widely distributed throughout the Mexican Republic. In Mexico, it can be found wild in its natural environment, planted in backyards and gardens, and grown in pots or containers as improved varieties to decorate indoor spaces. The plant is a shrub that measures between three and five meters in height, it is a deciduous plant, its leaves are simple, arranged alternately, from ovate to elliptical in shape. The most important structural part is the bracts of different sizes, shapes, colors and surrounding the flowers.

Producers of ornamental plants from the state of Morelos and other entities where poinsettia is produced in Mexico demand varieties of national origin with the argument that this species is native to the country and 100% of the genetic material cultivated until now has been improved abroad. On the other hand, the premium paid by Mexican producers for cuttings of commercial poinsettia varieties from abroad, plus the investment cost to take them to a finished plant, is considered high.

To respond to the above demand, the National Institute of Forestry, Agricultural and Livestock Research (INIFAP) has implemented the Christmas Eve Genetic Improvement Program in the Zacatepec Experimental Field, state of Morelos. The criteria applied to genetic improvement are focused on characters related to leaf, bract and plant architecture, essentially. The strategies followed have been based on national germplasm with a broad genetic base, manual crossing of materials with the best aesthetic attributes demanded by the market, reducing the height of the plant, improving the capacity for issuing branches

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and the general architecture of the plant through graft. To date, ten poinsettia varieties have been released.

## TRAINING OBJECTIVE

Make known the scientific bases of poinsettia breeding, as well as the different strategies that can be adapted for the species.

## EXPECTATIONS

At the end of the training, students are expected to have the basic scientific knowledge of genetic improvement on poinsettia, as well as the necessary tools to analyze the information that is generated. In addition, the different strategies that can be applied, which will allow the generation of new cultivars.

## PARTICIPANT RESEARCHERS

NAME/MAIL	SPECIALTY	ADSCRIPTION	COUNTRY
<b>Dr. Jaime Canul Ku</b> Researcher canul.jaime@inifap.gob.mx	Plant genetics	National Institute of Forestry, Agriculture and Livestock Research (INIFAP) Centro de Investigación South Pacific Regional Research Center. Zacatepec Experimental Field.	Mexico

<p><b>Dr. Edwin Javier Barrios Gómez</b> Researcher barrios.edwin@inifap.gob.mx</p> <p><b>Dra. Sandra Eloísa Rangel Estrada</b> Researcher Rangel.sandra@inifap.gob.mx</p>	<p>Plant genetics</p> <p>Plant physiology</p>	<p>National Institute of Forestry, Agriculture and Livestock Research (INIFAP) South Pacific Regional Research Center. Zacatepec Experimental Field.</p> <p>National Institute of Forestry, Agriculture and Livestock Research (INIFAP) South Pacific Regional Research Center. Zacatepec Experimental Field.</p>	<p>Mexico</p> <p>Mexico</p>
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## WORK PROGRAM

### SCIENTIFIC BASES FOR THE BREEDING OF POINSETTIA AND APPLICABLE STRATEGIES FOR THE GENERATION OF NEW CULTIVARS

Session 1: Tuesday, September 22, 2026

SCHEDULE	ISSUE	AIMED AT	INSTRUCTOR
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10:00 to 12:00 Hrs Mexico time	Current situation of poinsettia production and the history of its genetic improvement.	Japanese students	Dr. Jaime Canul Ku Dr. Edwin Javier Barrios Gómez
12:00 to 14:00 Hrs Mexico time	Collection of germplasm as raw material for genetic improvement	Japanese students	Dr. Jaime Canul Ku Dr. Edwin Javier Barrios Gómez

### Session 2: Wednesday, September 23, 2026

SCHEDULE	ISSUE	AIMED AT	INSTRUCTOR
10:00 to 14:00 Hrs Mexico time	Germplasm characterization to identify parents	Japanese students	Dr. Jaime Canul Ku Dr. Edwin Javier Barrios Gómez

### Session 3: Thursday, September 24, 2026

SCHEDULE	ISSUE	AIMED AT	INSTRUCTOR
10:00 to 14:00 Hrs Mexico time	Sexual and asexual propagation: Theory and practice	Japanese students	Dr. Jaime Canul Ku Dr. Edwin Javier Barrios Gómez

### Session 4: Friday, September 25, 2026

SCHEDULE	ISSUE	AIMED AT	INSTRUCTOR
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10:00 to 14:00 Hrs Mexico time	Plant breeding strategy through hybridization	Japanese students	Dr. Jaime Canul Ku Dr. Edwin Javier Barrios Gómez
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**Session 5: Saturday, September 26, 2026**

SCHEDULE	ISSUE	AIMED AT	INSTRUCTOR
10:00 to 14:00 Hrs Mexico time	Plant breeding strategy through mutagenesis	Japanese students	Dr. Jaime Canul Ku Dr. Edwin Javier Barrios Gómez

**Session 6: Sunday, September 27, 2024**

SCHEDULE	ISSUE	AIMED AT	INSTRUCTOR
10:00 to 14:00 Hrs Mexico time	Selection of promising materials	Japanese students	Dr. Jaime Canul Ku Dr. Edwin Javier Barrios Gómez
SCHEDULE	ISSUE	AIMED AT	INSTRUCTOR

**Session 7: Monday, September 28, 2026**

SCHEDULE	ISSUE	AIMED AT	INSTRUCTOR
10:00 to 12:00 Hrs Mexico time	Transmission of phytoplasma through grafting to generate greater branching	Japanese students	Dr. Jaime Canul Ku Dr. Edwin Javier Barrios Gómez
12:00 to 13:00 Hrs Mexico time	Varietal description, registration process and registered varieties	Japanese students	Dr. Jaime Canul Ku Dr. Edwin Javier Barrios Gómez



13:00 to 14:00 Hrs Mexico time	Conclusions and closing	All	All
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