**IPSR International Training Course for Plant Stress Science 2025 (ITCPSS2025)**

**~ Plant Genetic Modification, transformation, and targeted mutagenesis ~**

**1. Overview**

- Organizers: Hiroshi Hisano, Ivan Galis, Ryo Matsushima, IPSR

- Dates: August 25th – August 29th (5 days)

- Venue: IPSR, Okayama University, Chuo 2-20-1, Kurashiki, Okayama 710-0046 Japan

- Language: English

- Target Audience: mainly university students, graduate students, and young researchers within 3 years of receiving their PhD in plant science, plant genetics, and plant biotechnology

- Participants: 6 participants maximum

- Guest Lecturer: Professor Cathie Martin at John Innes Centre (JIC)

**2. Background**

Plant genetic improvement is a crucial field of research that addresses global challenges such as food security, climate change adaptation, and sustainable agriculture. Advances in targeted mutagenesis, tissue culture, and transformation techniques have significantly enhanced the ability to develop crops with improved traits, including higher yields, disease resistance, and tolerance to environmental stresses.

The Institute of Plant Science and Resources (IPSR), Okayama University, has been at the forefront of research in plant biotechnology and genetic improvement. This training course provides an unparalleled opportunity for researchers and students to gain hands-on experience with cutting-edge technologies and methodologies.

**3. Purpose**

This international training course aims to:

* **Enhance knowledge and technical skills** in plant genetic improvement through lectures and experimental demonstrations.
* **Provide hands-on experience** in tissue culture, transformation techniques, and genome editing to bridge the gap between theory and practical application.
* **Develop proficiency in microscopic techniques** for analyzing barley transformants, a key model in plant genetic studies.
* **Facilitate international collaboration** by connecting participants with experts from the IPSR, Okayama University.
* **Empower researchers and students** with the latest innovations in plant

**4. Program Contents**

- Lectures: Presentations by distinguished researcher, Dr. Cathie Martin from John Innes Centre on advanced plant genetic improvement techniques

- Experimental Demonstrations: Hands-on demonstrations of tissue culture and transformation techniques in barley

- Theoretical Sessions: Lectures on targeted mutagenesis technologies and their applications in barley and other crops

- Imaging Analysis: Observation and analysis of barley transformants using a fluorescence stereomicroscope and a confocal laser scanning microscope

**5. Tentative schedule**

25/08/2025: AM, Arrivals, Registration
PM, Welcome events, Introductions, IPSR facility tours

26/08/2025: AM, Demonstration of plant transformation and tissue culture
PM, Lecture and discussion

27/08/2025: AM, Imaging analysis using transformants
PM, Lecture and discussion

28/08/2025: AM, Training for targeted mutagenesis
PM, Workshop, Farewell party

29/08/2025: AM, Demonstration of transformation
PM, Ohara Museum Tour (Optional), Departure

**6. Application Process**

* Application Period: May 15th – June 15th, 2025
* Required Documents:
	+ **01. Application Form for the IPSR ITCPSS2025**
	+ **02. Recommendation Letter Form for the IPSR ITCPSS2025**
* Submission Method: Via email **[ipsr-itcpss2025@okayama-u.ac.jp]** with ‘**Application for ITCPSS2025**’ in the subject line.
* Selection Process: Document screening followed by notification of results by June 30th 2025

We will select 6 participants maximum from mainly university students, graduate students, and young researchers in plant science, plant genetics, and plant biotechnology.

**7. Participation Fee & Accommodation**

* Fee: Free
* We support the costs of transportation and accommodation for training course participants. The course participants are accommodated in the Kurashiki guesthouse.

**8. Contact Information**

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