

Japanese and Indonesian Researchers Join Genome Editing Technology Workshop at UGM

Friday, 23 November 2018 WIB, By: Marwati



Tens of researchers, academics, and practitioners from Indonesia and Japan joined the *2nd Workshop on Plant Genetic Engineering* held at Wisma MM UGM Hotel from 22-23 November 2018.

It was part of joint research between Faculty of Biology UGM and Graduate School of Science and Graduate School of Bioagricultural Science, Nagoya University, Japan that are recipients of grants from Japan Society for Promoting Science-Bilateral Joint Research Program (JSPS_BJRP Kemenristekdikti) 2017-2019. The researchers are Dr. Endang Semiarti, M.Sc., Dr. Ir. Aziz Purwantoro, M.Sc. and Dr. Ir. Jaka Widada, M.Si from UGM and Prof. Shogo Matsumoto, Dr. Yasushi Yoshioka, and Masaki Ito, Ph.D. from Japan.

"The workshop is aimed at enhancing the human resource capacities and skills of both the Indonesian and Japanese researchers, especially in plant genetic engineering," said event chairman, Dr. Endang Semiarti, M.Sc., on Thursday (22/11).

The resource persons of the workshop are Masaki Ito, Ph.D., (Nagoya University), Dini Astika Sari, M.Biotech (Indonesian Biotechnology and Bioindustry Research Centre), Dr. Endang Semiarti

(Biology UGM), Dr. Aziz Purwantoro (Agriculture UGM), and Dr. Jaka Widada (Agriculture UGM).

Masaki Ito, researcher from Graduate School of Bioagricultural Sciences, Nagoya University, said the emergence of new technology to manipulate target gene in living cells or known as genome editing had paved the way for molecular plant breeding. Principally, CRISPR/Cas9 system attracted much attention due to the easy use and high efficiency,

In his opinion, the impact of new technology in plant breeding relied on the efforts to find target gene that may provide required characteristics in plants and decorative plants. One of these is better growth and size as well as increase in agricultural production and plant economic value.

“Chromosome multiplication engineering (polyploidy) has much been used for plant breeding as it increases the size of cells and organ,” he said.

Meanwhile, Endang Semiarti described the applications of CRISPR/Cas9 in orchids. Genome editing system may produce plants with new, beneficial characteristics, such as quick blooming, disease resistance, etc. Another speaker, Dini Astika Sari, further described CRISPR/Cas9 application in oil palms.

In the workshop participants also had hands-on *in silico* making for single guide RNA gene target, isolation technique of DNA genome from transgenic plants and DNA plasmid isolation from *Agrobacterium tumefaciens*. Furthermore, they will do practicum in the Biotechnology Lab of Faculty of Biology UGM.

Related News

- [Nagoya University Students Apply Orchid Genome Editing at UGM](#)
- [Biology Student Wins Young Minds Award](#)
- [CRISPR/Cas9, New Plant Breeding Technique](#)
- [Faculty of Biology UGM Disseminates Research on Plant Genetic Engineering](#)
- [UGM Students Join JENESYS Programme in Japan](#)