UGM Students Win ASEAN Agricultural Engineering for Sustainable Agriculture Production Student Design

Monday, 28 October 2019 WIB, By: marwati

Agricultural Technology students of Universitas Gadjah Mada UGM became the second winner of the *Agricultural Engineering for Sustainable Agriculture Production (AESAP) Student Design Competition 2019*, hosted by IPB from 14 – 15 October 2019.

To the competition for ASEAN students of Agricultural Engineering, the UGM students submitted a design in Agricultural and Biosystem Engineering in the form of Automatic Irrigation System with System of Rice Intensification (SRI) method.

“The technology is able to set the watergate opening in supplying water needs depending on the phase of the rice growth according to the SRI,” said Lukas Wiku, team chairman, on Monday (28/10).

Lukas said the device that supports the control of water surface was developed along with fellow students Ahmad Fajar Maulana and Dian Fatmawati in the Smart Agriculture Research under the guidance of Dr. Andri Prima Nugroho.

Lukas explained the technology development was necessary to meet the water needs in line with the rice growth phase. The phases consist of vegetative which needs 0.5 cm water depth, weeding 2-3 cm, generative 0.5 cm, and harvest season with the water getting drained.

The water surface controller has the main component in the form of microcontroller (Wemos WSP8266). It is equipped with water surface sensor that is based on electrical conductivity. Electrical conductivity change is read as the change in analog tension that is later used to activate water valve opening as actuator. Reading and controlling of water surface is transferred and recorded automatically with the use of Cloud technology that utilises WiFi of the GSM for data delivery.

This design has won the second place title after beating the team from Romblon State University Philippines, Universitas Brawijaya, and Universitas Sriwijaya.

"*Alhamdulillah*, despite a short preparation and rigid assessment, we were able to optimise what we'd designed and earn the win," he said.

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