

Land Monitoring System Leads UGM Students to Awards in Malaysia

Wednesday, 02 October 2019 WIB, By: Marwati



Agricultural and Biosystem Engineering UGM students have won a bronze medal in the Product Innovation competition, *Agricultural Engineering Annual Regional Convention (ARC) 2019*. The event was held from 22-25 September 2019 at Politeknik Kota Bharu, Malaysia.

The innovative product finally joined the big three and beat 24 products by other participating universities from countries that include Malaysia, Thailand, Philippines and Indonesia.

In the annual competition for ASEAN Agricultural Engineering students, the UGM students presented a monitoring system for the environment, Automatic Weather Station (AWS). Named as ASMOSYS, the system was to support the application of precision agriculture concept.

"With this tool, farmers will get to know the land condition specifically in real time," said M. Soleh Hidayat, team member, on Tuesday (1/10). He developed the system along with Abipraya Wibawa Jati and Anjar Firmansyah in Smart Agriculture Research, under the guidance of Dr. Andri Prima Nugroho.



Soleh said the system consists of main component, Local management sub-system (LMS), comprising microcontroller to handle environment sensor and data transmission to Global management sub-system (GMS). The data transmission from LMS to GMS uses cellular networks to enable access and installation in agricultural lands. Data management is done through cloud system to enable access and data processing, for example for prediction or estimation of water loss.

This system is added with features integrated with cloud system and use of flexible environment sensor suitable with operational needs of the cultivation. There is also a scenario to anticipate against unstable data transmission networks, self-energy, and analysis module such as estimation and prediction of evapotranspiration.

Andri Prima Nugroho said the Product Innovation competition was a prestigious one because the team had to demonstrate and present an exhibition display to the jury in the event. *"Alhamdulillah,* the innovative product by UGM has been appreciated and I hope it can be improved in the future," he said.

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