

ROASTER, Portable Tea Harvester by UGM Students

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A team of UGM students has made a breakthrough in the agricultural technology sector that facilitates the process of harvesting tea, which is a portable remote control-based tea picking machine.

“The machine is expected to shorten the process of harvesting tea,” said the team leader, Maulidya Rahmania Atikah, Wednesday (7/4) at UGM.

The tea picking machine named as ROASTER was designed by the Faculty of Agriculture student along with Muslimin Septianto (D4 Management & Maintenance of Heavy Equipment), Ahmad Novan Khoerul Mizan (D3 Electronics and Instrumentation), Ario Praditya Putra (Faculty of Agriculture), and Rany Ayu Lestari (D3 Electronics and Instrumentation).

The development of ROASTER was initiated by their concern on the rapidly decreasing number of tea pickers. It was coupled with the complaints of tea picking machine operator at PT. Pagilaran tea company about the difficulties in operating the existing machine that is huge and impractical. In fact, the machine requires 2 to 4 people to operate.

“It’s large dimension makes it impractical to carry, especially with the hilly tea plantation,” stated Maulidya.

Even though the machine can improve the production and efficiency of harvesting tea, some problems are still unsolved. Moreover, if the machine is damaged, it cannot be repaired because there are no spare parts available.

In that condition, the five students under the guidance of Dr. Rani Agustina Wulandari, S.P., M.P., developed a portable tea picking machine. The prototype was successfully granted with research and development fund from Higher Learning Directorate General through the Student Creativity Program 2018.

Muslimin added that ROASTER was invented with several components, including a chainsaw, fiber, and blades. In the manufacturing, the machine was designed by considering the weight and dimension to meet the portability and ergonomic value of tea picking machine for easy use.

The machine was equipped with a GPS module to locate the machine, temperature sensor, and Real Time Clock module. In addition, it also has an xbee shield, power supply, and Arduino that supports the accuracy of machine operation.

“To ensure the comfort and safety in operation, ROASTER is designed in a shape that fits the ideal position between the tea pickers and plantation. The operation only requires one person,” he explained.

With this invention, tea pickers are expected to harvest tea efficiently and easily by using a portable tea picking machine. The machine can be a solution to the deficiency of tea pickers to increase tea production.

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