

## Microorganism Diversities Not Yet Utilised Optimally

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Indonesia is a tropical country with rich biodiversities with the supplies of microorganism resource which is one of the largest in the world. Experts estimated there are millions of bacteria, but just 5-10 percent have been identified.

Microbiologist from UGM, Prof. Agnes Sutariningsih Soetarto, M.Sc., Ph.D., said microorganism diversities have not been given enough attention by industry and government. During this time, microorganism has been utilised to produce necessary protein and enzymes for food industry, bioremediation agents, pollutant biodegradation, and other pharmacology agents. In the concept of sustainable development, utilisation of microbial diversities is important to boost the economy and improvement of environment quality.

“The role of research and development of microbial diversities need to be promoted,” said Agnes Sutariningsih in a scientific speech titled *Microbiology-nanotechnology in Sustainable Microbial Diversities* during the summit of 61th anniversary event of Faculty of Biology UGM on Tuesday (19/9).

Agnes mentioned there were samples of bacteria in the country that are found and considered to be producing dehalogenases, taken from the volcanic soil of Mt. Merapi Yogyakarta and Sikidang crater



in Dieng Plateau, Central Java. Agnes is currently researching the bacteria that can be utilised to clean the environment from metal pollutants.

Agnes and her team from Math and Natural Sciences Faculty and Biology Faculty UGM were interested in the hypothesis that underground bacteria are indicated to have damaged the earth magnet. Such bacteria are then collected for lab observation. These are further tested to know the morphology and activities. It is eventually known that there is a tendency for the bacteria colony media to collect in one pole. "It turned out the microorganism activities going towards a certain pole. We utilise these bacteria for cleaning the metal pollutants," said the Biology lecturer.

According to Agnes, despite the research still remaining at the lab scale, but this bacterial finding can indeed be utilised to clean pollutants. "The bacteria that contain magnetosomes can clean the environment from metals and these can be developed further," she said. Thus, this opens the door for the industry to come into lab scale research.

In this anniversary, Faculty of Biology UGM established a cooperation with PT Mekar Unggul Sari in the provision of melon seed and fruit, horticulture technology, and applied technology exchange as well as field practice. The agreement of cooperation was signed between Dean of Faculty of Biology, Dr. Budi Setiadi Daryono, and Director of Mekarsari, Danty I Purnamasari. Another agreement was made between Faculty of Biology and Taman Pintar Yogyakarta, which was represented by its head of management, Afia Rosdiana.

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