

UMS wins Best State Innovation Award

Published on: Saturday, October 19, 2019



KOTA KINABALU: Universiti Malaysia Sabah (UMS) through the EcoCampus Management Centre coordinated the participation of two environmental sustainability innovation projects that contributed to the winning of the Best State Innovation Award at the 10th International Greentech and Eco Products Exhibition and Conference Malaysia (Igem) 2019 in Kuala Lumpur Convention Centre on October 9-11.

One of the projects from UMS was on “Edible BioPlastic Based Active Food Packaging and Coating” by Dr Joko Sulistyo dan Dr Norliza Julmohammad from the Faculty of Food Science and Nutrition. The innovation was aimed at replacing single-use plastics, especially in the food material packaging, selling and even, export industry in the future. Bio-cellulose film derived from bacterial cultures was used to coat food materials in order to prevent rotting even when exposed to the air in room condition.

The film could also be strengthened by adding starch to be made into bioplastic bags. Due to the organic nature of the bio-cellulose film, food coating could be consumed directly with the food without washing, and the bioplastic bags could easily biodegrade and dissolve in water when discarded. The bioplastic film could also be turned into edible straws.

Another advantage of the bioplastic was that it was not produced from food sources like seaweed or potatoes; hence, it did not sideline the fundamental function of food sources.

The other innovation project was the “UMS Organic Compost” by Associate Prof Dr Abu Zahrim Yaser, Dr Sariah Saalah, Dr Mariani Rajin, Dr Elisa Azura Azman and Nur Aqeela Syuhadah Aji from the Faculty of Engineering. The innovation project used an enclosed composting system without needing electricity or microbe addition, was anti-pest encroachment (rats), stench-less, and compost mixing possible. The system was able to compost about 300kg of food waste at any one time. The compost produced had high content of nitrogen for plant growth but not toxic to the plants. The system could also be modified in terms of its composter size so that it could be used domestically at housing areas.

The two innovation projects can address environmental pollution issues and climate crisis being faced by the whole world presently, specifically related to single use plastic pollution and food waste disposal. Everyday about 10-20 million tonnes of plastic wastes enter the oceans, and the rest was disposed to the landfills. Approximately 50pc or 150-300 million tonnes of the daily plastic wastes disposed are single use plastics used in food packaging. Average duration for single use plastic usage is only 12 minutes, but the plastics remain in our environment forever. On the other hand, organic food wastes account for the most wastes generated (31-45pc of all yearly wastes) in Malaysia.

Igem which is annually organised by the Ministry of Energy, Science, Technology, Environment and Climate Change (Mestec) Malaysia is the largest platform throughout South East Asia to highlight green innovation projects with about 350 exhibition booths and 35,000 visitors for 2019 from government agencies, private sector, and multinational conglomerate firms in the fields of green technology and environmental sustainability. Igem covers main sections, namely Energy, Manufacturing, Transportation, Construction, Waste Management, Water Management, Information and Communication Technology, Agriculture, and Biodiversity. A total of about RM 2.8 million worth of deals and negotiations related to green technology and environmental sustainability were realised during Igem 2019.

Also present were Deputy Director of the UMS EcoCampus Management Centre Kelvin Kueh Boon Hee as the Head of UMS Research Delegation, researchers for the UMS Exhibition, namely Assoc Prof Dr Md Shafiquzzaman Siddiquee, Dr Sujjat Al Azad and Dr Lillian Gungat, as well as Hetty Hazwani Dzulkipli as the Head of UMS Secretariat.