Research

UMPSA researcher Dr Aizi develops Synbiotic Booster to enhance Mushroom Yield in Malaysia

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GAMBANG, 2 December 2024 – Mushrooms are one of the best sustainable food options due to their numerous medicinal benefits.

Mushroom cultivation also involves low costs and can generate high income, particularly for mushroom farmers in Malaysia.

Recognising the benefits of mushrooms, a researcher and the Dean of the Faculty of Industrial Sciences and Technology (FSTI), Universiti Malaysia Pahang Al-Sultan Abdullah (UMPSA), Dr Aizi Nor Mazila Ramli, together with her team, has developed a synbiotic booster for mushrooms.

According to Dr Aizi Nor Mazila, the synbiotic booster is a combination of prebiotics and probiotics to enhance the growth and yield of mushrooms, particularly oyster mushrooms.

“Synbiotics are essentially a mixture of probiotics and prebiotics that have a positive effect on the host by improving the viability and activity of beneficial microorganisms.

“It is also believed to have potential positive effects in enhancing the yield and growth of organisms.

“However, there is limited information and evidence on the effects of synbiotics on oyster mushroom cultivation,” she explained.

This research aims to address the challenges faced by mushroom farmers in achieving consistent yields of high-quality mushrooms.

She stated that the synbiotic booster has been proven to enhance the nutritional value and antioxidant content of oyster mushrooms, making them a more nutritious option with potential benefits for the mushroom industry.

“This product is safe to use as all its active ingredients are recognised as safe.

“However, continuous research is needed to optimise the prebiotic effects derived from pineapple waste and to explore the potential application of this product on other types of mushrooms besides oyster mushrooms.

“The idea for this study arose from issues reported by mushroom farmers in Malaysia, who face inconsistencies in mushroom yield and quality each season,” she added.

The research began in 2022 and was fully completed in 2024.

The study was conducted in collaboration with the Malaysian Pineapple Industry Board (LPNM), which supported the use of pineapple waste as the main ingredient in this product and assisted in its application to increase mushroom yields among local farmers.

She added that the synbiotic booster utilises a blend of prebiotics derived from pineapple waste and probiotics such as Lactobacillus plantarum and Lactobacillus casei.

“This formula aids mushroom growth by improving the viability of beneficial microorganisms in the cultivation medium.

“The uniqueness of this product lies in its synbiotic combination, the first of its kind in mushroom boosting, which blends prebiotics and probiotics to effectively improve the quality and yield of mushrooms.

“It is hoped that this product will positively impact the achievement of the Sustainable Development Goals (SDG), particularly SDG 2 (Zero Hunger) and SDG 12 (Responsible Consumption and Production) while contributing to better environmental, social, and governance outcomes in Malaysia,” she explained.

She also mentioned that by optimising the use of pineapple waste, this product contributes to resource sustainability and the local economy.

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