Research

Ir. Ts. Dr. Norazlianie produces pure butter in food technology

Mon, 10/23/2023 - 13:00

PEKAN, 23 August 2023 - The production of dairy-based products in Malaysia is less than five per cent in the country and the rest depends on imported products.

This indicates that there is a high opportunity for dairy-based products that can be developed to penetrate the market.

Milk fats still holds a high percentage in imported dairy products such as ghee and butter.

Almost all commercially produced butter is imported and distributed in Malaysia.

Looking at the situation, the Director, Universiti Malaysia Pahang (UMPSA) Press, Research and Innovation Department and lecturer of the Faculty of Manufacturing and Mechatronic Engineering Technology (FTKPM), Ir. Ts. Dr. Norazlianie Sazali, 34 produced pure butter in food technology which can improve the development of dairy products in Malaysia.

The research, which began in January 2020, was also assisted by an FTKPM undergraduate student, Arjun s/o Asogan.

According to Ir. Ts. Dr. Norazlianie, the main technical reform of this research is about the culturing process where Lactobacillus plantarum probiotics are added to allow the butter to be cultured.

“The colour of the cultured butter is white and has a smooth texture.

“Cultured butter is not new and the demand has been very high in recent years due to its advantages for healthy nutrients and food security.

“People’s awareness for food security is increasing because cultured butter is rich in vitamins A, D, E, K-2 and polysaturated fats,” she said.

She further explained that for people who are on a keto diet, they rely heavily on this polysaturated fat and not carbohydrates.

“There are two types of saturated fat, first is polysaturated fat which is technically safer to eat and second is monosaturated fat which is harmful to human health in the long term.

“Monosaturated fats lead to cardiovascular disease, obesity and many more complex diseases.

“The cultures selected are plant-based,” she said.

Therefore, this product is suitable for vegan and vegetarian groups.

“The produced butter is rich in nutrients because butter cultured with *Lactobacillus plantarum* helps in weight loss, aids digestion, improves iron absorption, improves heart problems, and minimises human health problems.

“I hope this research will be able to reduce the country’s dependence on butter imported from abroad.

“Besides Malaysia, many countries in the world are also experiencing a food security crisis,” she said.

She further said, previously, the research used cultures of *Lactobacillus acidophilus, Lactobacillus rhamnoses and Lactobacillus plantarum.*

“Lactobacillus plantarum was chosen due to the higher nutrient content in butter compared to the other two cultures.

“The research is still ongoing for any improvements that can be made.

“Right now, we have a partnership with Milky Way Farm Enterprise and this research requires a lot of milk, about 20 litres, to produce 1 kg of butter.

“The company can provide the required amount of milk in this research,” she added.

At this point, the estimated price for 1 kg of pure butter produced is RM80.

This research won gold medals in the Invention, Creative and Innovation Competition (CITREX) 2022, Virtual Research and Innovation Exhibition (EEKA 2022), and International Invention, Innovation and Technology Exhibition (ITEX) 2022, as well as a silver medal in the International Innovative Competition (IIC 2022).

In addition to this research, she produced a portable carbon membrane for gas purification.

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