

DOST-ITDI develops plant-based protein concentrate for sports nutrition

Under growing huge piles of agricultural wastes from coconut, rice, and vegetables is untapped wealth. Called by some as 'green gold', the global functional proteins market is projected by Markets and Markets Research Private Ltd. based in Pune, India to reach US\$5.73 billion by 2022.

At DOST-ITDI (Industrial Technology Development Institute), food technologist Lourdes Montevirgen and her team will thus be working to tap into that market. Their focus is primarily to increase usage of protein concentrates from local plant and vegetable sources, which otherwise end up as wastes or are underutilized.

Funded under the DOST Grant-In-Aid program, the Team will recover protein from processing by-products such as pressed coconut meal and rice bran, and local vegetables like cowpea (*paayap*), and pigeon pea (*kadyos*).



Current functional protein concentrates and their other forms are seeing increased global demand because of consumer awareness and needs for food products with improved functionalities such as infant formula, sports nutrition, functional beverages, dietary supplement, and animal nutrition.

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More than these, however, Montevirgen is looking at alternative material sources that would not compete with currently more important usage, e.g., protein from coconut meat instead of pressed meal, or protein from animal sources instead of rice bran. These are sources which offer functionality for other higher-value products like copra and their derivatives, and milk and milk products.

The project has started rolling and the Team aims to develop protein concentrates that can be applied in sports nutrition like high-protein drinks, animal meat alternatives like textured vegetable protein (TVP) products, and in liquid food as stabilizers or emulsifiers.

To recover protein from these sources, the project will develop and modify existing methods of pretreatment, extraction, and recovery. These will maximize factors such as productivity, reliability, and efficiency of methods to recover the protein especially for commercial production of food-grade protein concentrates.

Hence, while the growth of the proteins market is driven by consumer awareness and needs for functional foods, the Team is riding on healthy diet, increasing instances of chronic diseases, and technological upgrades in food to shift demand from plain functional to healthy and functional foods, and achieve the envisioned change through research and development (R&D). (*AMGuevarra & MCMManabat, DOST-ITDI S&T Media Service*)

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