

OPTI-FERN:

Fern Powder as a Functional Ingredient



THE PROBLEM

The rising prevalence of health issues such as diabetes, obesity, coronary heart diseases, and foodborne illnesses is compelling consumers to seek out food products that are not only healthier and more nutritious but also tailored to address specific health concerns. With a relative global increase in these health concerns, developing functional foods is one way to provide healthy options for consumers.

THE SOLUTION

CMU-TLDC created an innovative and beneficial fern powder from selected fern species through the “**OPTIFern**: Optimization, Packaging, Technology, and Innovation of Functional Food Products from Ferns” program. Dr Jose S. Valmorida’s project utilized the fern powder in the production of crackers, yogurt drinks, tea, nutribar, and gummy candy. The resulting products underwent various analyses, including physicochemical, antioxidant and phytochemical, COX inhibition assay, sensory evaluation, and nutritional and microbiological analyses. Results of these analyses have shown that fern powder has excellent potential to be used as a functional ingredient in support of treating inflammation with diminished side effects. The nutritional and mineral composition demonstrated a favorable presence of essential nutrients and can be a valuable source of minerals, energy, and protein. The physicochemical and microbiological characteristics of the products were also found to meet the standards established by both the FDA and Codex Alimentarius.

Moreover, the outcomes of the market survey revealed that consumers prefer the following products in order: fern crackers, yogurt drink, gummy candy, ready-to-drink tea, and fern nutribar. This suggests significant economic potential attributed to their health benefits, innovative nature, availability of suitable raw materials, and versatility.



TECHNOLOGY GENERATOR

Central Mindanao University (CMU)
Project Leader: Dr. Jose S. Valmorida

TECHNOLOGY DEVELOPMENT

The technology is currently at Technology Readiness Level (TRL) 4, with patents and/or utility models filed. A market survey was already conducted through this project. The respondents positively perceived the pricing of each product and expressed willingness to purchase innovative fern-based products. Thus, indicating that the suggested fern-based products hold promise for market success. The proposed price for a 250g pouch of fern powder is ₱700.00. The Fern Gummy Candy (100g bottle) is available for ₱160.00, the Fern Cracker (28g) for ₱17.25, and the Fern Yogurt Drink (75ml) for ₱50.25.

The technology owners are conducting promotional activities and are actively seeking product investors or adopters. Interested parties may send letters of intent to contact details provided below.

Interested technology adopters may send a letter of intent addressed to:

Central Mindanao University - Intellectual Property and Technology Business
Management (CMU-IPTBM)
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