

## Detection of Beneficial Lactic Acid Bacteria (LAB) and Yeast In Sarawak Fermented Food

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### ABSTRACT

Sarawak native's fermented food can be a catalyst for boosting the local economy in Sarawak. The Lactic Acid Bacteria (LAB) are generally regarded as safe, have a stability of usage, and originate from natural resources. Lactic acid bacteria and yeast work in synergy to provide a natural way to enhance the nutritive value and flavour of the food. The study aims to investigate the presence of potential probiotic Lactic Acid Bacteria (LAB) and yeast isolated from Sarawak fermented food. Two hundred fifty (n=250) of samples including fifty (n=50) each sample such as fermented shrimps (cencaluk), fermented mustard vegetables (kasam ensabii), fermented fish (kasam ikan), fermented dabai (Canarium odontophyllum) and fermented fish (rusip). Molecular identification of the bacteria and yeast isolates was carried out by PCR amplification of the 16S rRNA (27F and 1492-R) and ITS (ITS5-F and ITS4-R) rRNA region. The successfully amplified PCR products were sent for Sanger sequencing. As a result, a total of 45.2% (113/250) Lactic Acid Bacteria (LAB) which are 96% (48/50) of *W. paramesenteroides* was detected in fermented dabai, 80% (40/50) *S. pasteurii* in fermented fish rusip samples and 50% (25/50) in *P. agglomerans* in cencaluk samples. Meanwhile, yeast *Candida* species; 90% (45/50) of *C. magnoliae* and 50% (25/50) of *C. parapsilosis* are detected in fermented dabai and ensabi respectively. Based on the findings, both yeast and bacteriocin-producing lactic acid bacteria found in the fermented food specifically in dabai. A better understanding of microbial ecology can help the food industry to improve the foods in terms of quality and safety. The good quality of the LAB and yeast in the food such as starter culture will enhance the texture and nutritional value and Sarawak fermented food product found enriched with LAB.

### Keywords:

LAB, yeast, Sarawak, fermented, food

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## 1. Introduction

Continual efforts have been made by national organizations to discover new tourism products and activities that have the opportunity of being marketed and promoted in Sarawak. Gastronomy has been identified as one of the new tourism products which is directly relevant to the Sarawak context. At present, gastronomy is a valuable source of attracting tourists from all over the world and this has led to the empirical investigation on domestic tourist perception of Sarawak ethnic native's food such as fermented food including *Terubuk ikan masin*, *cencaluk*, *pekasam* and many more [1].

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