

Microbiological characterisation of budu, an indigenous Malaysia fish sauce

Abstract

The study aimed to characterize the microbiological changes during fermentation of budu and hydrolytic properties of the isolated strains. The initial microbial load of the fish substrate was 5.13 ± 0.01 log CFU/g before decreased gradually to 3.20 ± 0.02 log CFU/g after 12 months of fermentation. *Micrococcus* sp was the predominant bacteria to initiate the fermentation before replacing by *Staphylococcus* sp that survived throughout the traditional process. Halophilic bacteria especially *Micrococcus luteus* and *Staphylococcus arlettae* exhibited good proteolytic and lipolytic activities compared to other isolated bacterial strains. However, most of the identified strains showed weak amyolytic and pectinolytic activity. *Lactobacillus plantarum* LP1, LP2, *Staphylococcus arlettae* SA1, *Saccharomyces cerevisiae* SC3 and *Candida glabrata* CG2 strains showed potential probiotic activities. These demonstrate that budu is a mixed cultures fermentation involving functional strains in hydrolyzing fish protein into solubilized liquid. Further study is suggested to focus on the selection of technologically important strains as starter cultures for reliable and enhanced budu fermentation.