## Chemical composition and microbial dynamics of budu fermentation, a traditional Malaysian fish sauce

## Abstract

The chemical and microbiological changes during spontaneous <italic>budu</italic> fermentation were elucidated on monthly basis (1–12 months). A significant increase (P<0.05) in pH, acidity, soluble protein, total protein, and moisture content was observed during <italic>budu</italic> fermentation, except for the fat content. The total microbial load decreased gradually from the initial of  $6.13\pm0.01$  to  $3.45\pm0.13$  log CFU g-1 after 12 months of fermentation. Overall, 150 isolates were identified, with a majority of bacteria (77%), followed by yeasts (12%) and 11% of unconfirmed species. Micrococcus luteus was the predominant strain that initiated the fermentation before it was replaced by Staphylococcus arlettae that exists throughout the fermentation. This study confirmed that lactic acid bacteria and yeasts often coexist with other microorganisms, even though a microbiological succession usually takes place both between and within species, which shaped the chemical and sensory characteristics of the final product. In addition, some of the isolates could be potentially valuable as starter cultures further controllable for improved and <italic>budu</italic> fermentation.