

Development of Dusun traditional fermented fish (bosou ikan) using Different concentrations of tuhau (*etlingera coccinea*)

ABSTRACT

This study aimed to determine the best formulation of Dusun traditional fermented fish (Bosou ikan) through sensory evaluation employing a 9-point hedonic test. Various concentrations of *Etlingera coccinea*, ranging from 0% to 8% w/w, were incorporated into fermented fish samples. Results revealed that the formulation containing 2% *E. coccinea* (F1) consistently exhibited superior sensory attributes, maintaining the traditional appearance while enhancing aroma, taste, and overall acceptability. Statistical analysis using the Friedman test confirmed F1's superiority, showing the lowest mean rank among alternatives ($p < 0.05$). Proximate analysis of F1 demonstrated notable increases in ash, crude fat, crude fiber, and crude protein content compared to Control Bosou ikan formulations, indicating enhanced nutritional profiles. Shelf-life analysis demonstrated a more controlled trend in reducing total viable count and total yeast and mold counts for the F1 formulation compared to the control, suggesting a potential influence of *E. coccinea* in inhibiting excessive microbial proliferation. Comparison of microbial loads between raw and cooked samples revealed that cooking effectively eliminated microbial counts, reaching safety consumption levels of 4 log₁₀ CFU/g (total yeast and mold) and 6 log₁₀ CFU/g (total viable count). The decrease in pH of raw and cooked samples over one month was attributed to increased acidity resulting from the activities of *Lactobacillus* sp., which utilizes carbohydrates in the medium to produce lactic acid. The study highlights that the F1 formulation with 2% *Etlingera coccinea* offers the most favourable sensory characteristics, proximate analysis, and microbial quality, providing valuable insights for product development in Bosou ikan production.