

EXPERIMENTAL FISH SAUCE FERMENTATION USING ENZYMES
AND HALOPHILIC BACTERIAL CULTURES

BY

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ABSTRACT

Two kinds of proteolytic enzyme preparations, Proteinase T, a commercial preparation, and a crude pyloric enzyme preparation of marine fishes, together with halophilic bacterial cultures were used in experimental fish sauce fermentation. Physical and chemical characteristics including clarity, color development, optical density absorbancy, free tyrosine concentration, volatile reducing substances (VRS) as well as the organoleptic appraisal of the end products after 8 months of fermentation were evaluated. The fermented sauce accelerated by pyloric enzymes treatment yielded the same brown color as Nam Pla, but it lacked the typical Nam Pla aroma. The added halophilic bacterial strains could confer the product with a similar and typical aroma to that of commercial fish sauce. Halobacterium OR previously isolated from the commercially fermenting batch, was superior to other tested halophilic bacterial strains in decreasing the amount of volatile reducing substances formed during the fermentation and as a result enhanced the aroma. The experimental sauce which was similar to commercial Nam Pla was also obtained from the fermentation of similar substrate treated with commercial Proteinase T. This study also showed that an appropriate rate of fish protein hydrolysis which is not too rapid was necessarily critical to produce good aroma fish sauce.