

# EFFECTS OF TEMPERATURE AND INTERMITTENT AERATION ON QUALITY OF SOY SAUCE

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## ABSTRACT

Soy sauce has been widely used as one of the main seasoning agents in Asian countries. Soy sauce is produced by two-steps fermentation processes, namely *koji* fermentation and *moromi* fermentation. In this study, different temperatures (25°C, 35°C and 45°C) together with intermittent aeration for *moromi* fermentation in bioreactor were investigated for understanding their influences on soya sauce quality, in terms of pH variations, ethanol concentrations and total nitrogen content in raw soy sauce during *moromi* fermentation. It was learned that as the aging of *moromi* took place, the pH level was decreased from pH 7 to pH 4.88. Also, the soy sauce had lower concentration of ethanol when higher temperature was used in *moromi* fermentation but the difference of temperature did not show a significantly effect on total nitrogen content in soy sauce. This study indicated that the temperature used in the *moromi* fermentation, coupled with intermittent aeration for 10 min at interval of three days, imposed significant effects on soy sauce aging and quality. Higher fermentation temperature of 45°C enhanced the aging of soy sauce, accompanied with lower content of ethanol and higher pH level in soy sauce. However, the total nitrogen content in the soy sauce was not significantly influenced by the fermentation temperature.