Effect of Latic Acid Bacteria on the Fermentation Efficiency and Quality Control of Chinese Cabbage Pickle [1]

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ABSTRACT

The aim of this study was to identify the best lactic acid bacteria species on the fermentation efficiency and the quality control of pickle vegetable. Four species of lactic acid bacteria were assigned into five treatments to manufacture Chinese cabbage pickle. The result showed that the pickle vegetable fermented with the lactic acid bacteria mixtures of *Lactobacillus lactis* + *Lactobacillus acidophilus* + *Leuconostoc mesenteroides* subsp. *mesenteroides* obtained the best performance on characteristics of the appearance, acidity, taste and over-all evaluation score. At the duration of 18-36 hours fermentation process of pickle vegetable obtained the highest amount of lactic acid. The lactic acid content increased from 515.05mg/kg to 3915.45mg/kg, resulted in the best flavor and quality, however, the similar performance was occurred only 72hours later in nontreated check. The result of hot water blanched and non-blanching treatment on Chinese cabbage pickle showed that the non-blanching pickle vegetable obtained the better taste, and maintained to the higher shredded value 11.0gm/sec. As with the increase in storage time, the pH value of sauce decreased from 3.87 to 3.58, the of lactic acid bacterial number decreased from 6.5×10^9 CFU/ml to 4.8×10^5 CFU/ml, and the shredded value was also decreased from 17.9 gm/sec to 8.2 gm/sec. In other words, Chinese cabbage pickle fermented with the mixed lactic acid bacteria could produce the best pickle quality in around 36 hours.

Key words: fermentation efficiency, lactic acid bacteria, chinese cabbage pickle.

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