

# Effects of Application of Temperature/Time Control System and Starter Culture on Sour Meat Quality

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## ABSTRACT

Sour meat which appears pink color and gelatinous is a native product in Thailand. It is prepared with pork mixed with steamed glutinous rice and seasonings to give the product special flavor and taste. In this study, we inoculated *Lactobacillus plantarum* as starter culture to ferment the mixture of ground pork, steamed glutinous rice and other ingredients to lower the pH of sour meat to 5.3 within a short time, then chilled at 4 °C to ensure the safety of the product. Four treatments were used in this study, two recipes (A, B) with and without starter cultures to prepare sour meat and fermented under different temperatures and times. The differences in chemical properties and functional components of the sour meat samples among different treatments (recipes) were compared. The results showed that the titratable acidity of the sour meat samples fermented at 35 °C (>0.7%), then followed by 30 °C and 25 °C in the descent order. It was also found that the titratable acidity of the sour meat samples increased with the fermentation temperature. Meanwhile, the pH value of the samples decreased with the lactic acid level increased. We also found that the volatile basic nitrogen content increased in the samples without inoculation starter culture as compared with the samples inoculated with *L. plantarum*. The numbers of lactic acid bacteria were found the highest in the samples inoculated with *L. plantarum* which was the dominant bacterium in the sour pork. In addition, the pH value decreased due to the number of lactic acid bacteria increased. The peptide content of the sour meat samples was found to increase with the fermentation temperature and time increased. They were 35 °C > 30 °C > 25 °C in the descent order, the maximum of peptide level was 26mg/ml. The total amino acid content was found the highest in the samples fermented at 35 °C among the four treatments. The content of organic acid increase with the fermentation time and temperature. In conclusion, the addition of lactic acid bacteria can increase the value and safety of the sour meat.

Keywords : sour meat, temperature/time control system.

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