# Effects of Application of Temperature／Time　Control System and Glucono－Delta－Lactone on Sour Meat Quality


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**ABSTRACT**

The purpose of this research is to study effects of application of temperature/time control system and glucono-delta-lactone (GDL) on sour meat quality. In the experiment, two recipes ( A and B ) were used as the control, then separately added with GDL as the treatments ( A + GDL and B + GDL ) and fermented at different temperatures and times. The changes in pH value, titratable acidity, microbial counts, volatile basic nitrogen content ( VBN ), SDS-PAGE pattern of muscle proteins, organic acid and peptide content of the sour ment samples were analyzed. The results were showed as follows: The results showed that the two sour meat samples added GDL could decline the pH value to 5.3 – a safe level which was useful to increase food safety. However, the naturally fermented sour meat samples ( the control groups, without GDL ) needed to take a longer time to lower the pH value to 5.3. Depending on temperature / time control system, after calculation, it was found that four group samples all met constant of the controls increased with the storage time extended, but the GDL added samples still maintained a low level of VBN. As to total microbial, lactic acid bacterial and aerobic bacterial counts for the control samples were up to 9.24 log CFU/g after fermentation, and the GDL added samples just grew to 6.71 log CFU/g. These results were noted that GDL addition could lower pH value of the sour meat in a short time, and it also could inhibited the microbial growth to extend the storage life of the sour meat. Additionally, the result of organic acid analysis, it was found acetic acid was the highest in the sour meat. However, there was slight amount of lactic acid detected in the sour meat which no lactic acid bacteria ( LAB ) added. This result indicated that there were LAB presented in the sour meat even it was a natural fermentation. The SDS-PAGE electrophoretogram showed the fragments of muscle proteins for the sour meat added GDL were lower than those of muscle proteins in the natural fermentation sour meat samples. It was found the peptide content was the highest in the samples fermented at 35°C for 24 hours. From these results, it can be concluded that the application of temperature / time control system and GDL to prepare the sour meat is helpful to food safety and extend its storagetime.



Keywords : sour meat、GDL、peptide、T/T control system


**Table of Contents**

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