

## The Effect of Cinnamaldehyde on Escherichia coli Survival during Low Temperature Long Time Cooking

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**Abstract :** The aim of the study was to investigate the combine effects of cinnamaldehyde (0.25 and 0.45% v/v) on thermal resistance of pathogenic Escherichia coli during low temperature long time (LT-LT) cooking below 60°C. Three different static temperatures (48, 53 and 50°C) were performed, and the number of viable cells was studied. The starting concentrations of cells were 10<sup>8</sup> CFU/ml. In this experiment, heat treatment efficiency for safe reduction indicated by decimal logarithm reduction of viable recovered cells, which was monitored for heating over 6 hours. Thermal inactivation was measured by means of establishing the death curves between the mean log surviving cells (log<sub>10</sub> CFU/ml) and designated time points (minutes) for each temperature test. The findings depicted that addition of cinnamaldehyde exhibited to elevate the thermal sensitivity of E. coli. However, the injured cells found to be well-adapted to all temperature tests after certain time point of cooking, in which they grew to more than 10<sup>5</sup> CFU/ml.

**Keywords :** cinnamaldehyde, decimal logarithm reduction, Escherichia coli, LT-LT cooking

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