

## MATHEMATICAL MODELLING OF MICROBIAL GROWTH IN FOOD – PARAMETERS OPTIMIZATION

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### ABSTRACT

Bacterial growth models are commonly used for the prediction of microbial safety and the shelf life of perishable foods. Growth is affected by several environmental factors such as temperature, acidity level and salt concentration. In this study a mathematical model to predict microbial growth in milk was developed and analyzed. Five different sets of data of microbial growth in dairy products were taken from combase and a model was prepared. And the results showed a good fit. In addition, the model provides maximum growth rate and the duration of the lag phase which may provide useful information about microbial growth. The fitting process was conducted using the computer software Origin 6.0.

**KEYWORDS:** Growth, Microbial and New Empirical Equation