

Título: GROWTH KINETIC OF *LISTERIA MONOCYTOGENES* AND *SALMONELLA ENTERICA* ENTERETIDIS IN THE CANTALOUPE PULP AND RIND

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Abstract:

During post-harvest steps such as transportation and storage, fruits are susceptible to contamination by various micro-organisms, both pathogenic as spoilage. *Salmonella enterica* Enteretidis and *Listeria monocytogenes* are among the main pathogens related to risk to public health. These micro-organisms can grow at different storage temperatures in fruit, such as cantaloupe. Therefore, the aim of this study was to describe the growth kinetics of these micro-organisms in the cantaloupe pulp and rind. Cantaloupe's were purchased in local shops in the city of Viçosa, Minas Gerais, Brazil. *S. Enteretidis* and *Listeria monocytogenes* were inoculated in cantaloupe pulp and rind samples and estimated the growth of these micro-organisms under temperature of 35°C. The experimental growth data were adjusted to the Baranyi and Robert model (1994) through the use of Baranyi's DMFit. The initial inoculated microbial load was of 10¹ at 10² CFU/g. Results showed that the Baranyi and Roberts model was well adjusted to experimental data. The final populations of *S. Enteretidis* and *L. monocytogenes* varied between 10⁷-10⁸ CFU/g and 10⁷ CFU/g, respectively. The growth rate (μ) of *S. Enteretidis* in cantaloupe pulp was 0.94 Log CFU.g⁻¹.h⁻¹ and for cantaloupe rind of 0.82 Log CFU.g⁻¹.h⁻¹. For *L. monocytogenes* the growth rate in pulp and rind were similar: 0.53 CFU CFU.g⁻¹.h⁻¹ and 0.52 CFU CFU.g⁻¹.h⁻¹ respectively. *S. Enteretidis* grew faster than *L. monocytogenes* in the temperature tested (35°C). These results indicate that the cantaloupes support microbial growth of both pathogens. In summary, this study highlights the impact of optimum temperature in the kinetic of microbial growth. Therefore, the results can be used to estimate the growth of this micro-organism in melon, as well as to understand data in future studies.

Keywords: growth kinetics; *Salmonella*; *Listeria*.

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