



EFFECT OF THE FOOD COMPOSITION ON THE MICROBIAL KINETICS IN PLANT-BASED MILK

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ABSTRACT

Predictive microbiology researchers studied deeply various factors, like temperature, pH, water activity and preservatives, that affect the bacterial kinetics in food. In our study our focus is on plant-based milk where we aim to increase the resolution of the predictions by including its biochemical composition in these factors. The advantage of such refinement is that the biochemical composition of the food matrix is quantifiable and generic enough to make it a suitable candidate for predictive modelling. These premises justify the hope that in-vitro and in-silico studies will be aligned with real scenarios in the food matrices (in-vivo).

A validation of the idea needs a lot of laboratory data, but already published data can be used for a feasibility study. The start is a summary of available information on the biochemical compositions and microbiological characteristics of various plant-based milk matrices and collate them into a database with well-defined ontology. Such database is key to find patterns, draw conclusions and generate predictions. In addition, such study helps to find gaps, optimize experimental design for new laboratory observations. It can also be used as an objective tool to decide whether extrapolations from similar food matrices like bovine milk and infant formulae are applicable.

Keywords: Plant-based milk, Predictive microbiology, Databases, Chemical composition, Bacterial Kinetics

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