to the antimicrobial, which could lead to the selection and regrowth of more tolerant subpopulations in heteroresistance populations. In this context, we will show the modelling conditions needed to describe regrowth of bacteria under ciprofloxacin.

Last we would like to stress how relevant is to expand further these models to consider either the food matrix or the operational conditions. Here we will illustrate how predictive microbiology models of antimicrobial effects are critical if combined with models describing for example the diffusion of the antimicrobial in active packaging or the influence of fluid dynamics on produce washing.

## SALT REDUCTION AND TEMPERATURE ABUSE IMPLICATIONS ON *LISTERIA MONOCYTOGENES* BEHAVIOUR IN *CHOURIÇO*

**Joana Barbosa[1], Teresa Bento de Carvalho[1], Norton Komora[2], Maria A. Azevedo[3], Beatriz Nunes Silva[1], Paula Teixeira[1]**

*[1] Universidade Católica Portuguesa, CBQF-Centro de Biotecnologia e Química Fina e Laboratório Associado, Escola Superior de Biotecnologia, Porto, Portugal; [2] R&D Department, Primor Charcutaria Prima S.A., Gavião, Vila Nova de Famalicão, Portugal; [3] Colab4Food-Collaborative Laboratory for Innovation in the Agri-food Industry, Vila do Conde, Portugal*

Reducing sodium in cured meats, like *chourição,* is essential to address health concerns related to excessive salt intake. However, reformulation presents challenges, as salt reduction may facilitate the growth of undesirable contaminants.

In this study, the main objective was to evaluate the impact of a new formulation of reduced salt *chourição* on the survival of *Listeria monocytogenes.*

For that, slices of traditional and 25% (w/w) salt-reduced *chourição* were inoculated (n = 3) with a cocktail of seven *L. monocytogenes* strains (~3 log CFU/g) and stored for 60 days at 4 and 10 °C (temperature abuse). *Listeria monocytogenes* counts were determined, and the Baranyi and Roberts model was used to describe pathogen growth.

In traditional *chourição*, the pathogen maximum growth rate ($\mu_{max}$; log CFU/g day-1) at 10 °C (0.21 ± 0.03) was 1.5 times higher than $\mu_{max}$ at 4 °C (0.14 ± 0.04). In salt-reduced *chourição*, $\mu_{max}$ at 10 °C (0.40 ± 0.24) was approximately 3 times $\mu_{max}$ at 4 °C (0.13 ± 0.02), highlighting a greater impact of temperature on microbial behaviour when salt is reduced. At 4 °C, pathogen $\mu_{max}$ in traditional (0.14 ± 0.04) and in salt-reduced *chourição* (0.13 ± 0.02) were similar. However, at 10 °C, $\mu_{max}$ was higher in salt-reduced *chourição* (0.40 ± 0.24), compared to traditional (0.21 ± 0.03), probably due to the combined effect of higher temperature and lower salt content. In salt-reduced *chourição*, storage at 4 and 10 °C led to shorten lag phases (18 and 12 days) in comparison to that of traditional *chourição* (23 days at 4 °C).

Product reformulation requires careful consideration so that food safety is not compromised. Various factors, including temperature, are important to hinder pathogen proliferation and guarantee the microbiological safety of foods when reducing the preservative effect of one hurdle (in this case, salt content), as illustrated by this study.