



ID 2959. *Listeria monocytogenes* survival on cooked ham after refrigerated storage and simulated digestion

Salud María Serrano-Heredia¹, Javier Sánchez-Martín¹, José Luis López-Carmona¹, Antonio Valero Díaz¹, Elena Carrasco Jiménez¹.

1. Department of Food Science and Technology, UIC Zoonosis y Enfermedades Emergentes (ENZOEM), CeIA3, Universidad de Córdoba, Campus Rabanales, 14014 Córdoba, Spain.

Tipo de comunicación/Type of communication: Oral

Afiliación/Affiliation: Department of Food Science and Technology, UIC Zoonosis y Enfermedades Emergentes (ENZOEM), CeIA3, Universidad de Córdoba, Campus Rabanales, 14014 Córdoba, Spain.

Introducción y Objetivo/Background and objectives

In 2022, listeriosis was the fifth most reported zoonotic infection, with 2,738 invasive cases and an 18.1% mortality rate. Ready-to-eat foods were identified as the food vehicles mostly involved, as *L. monocytogenes* can form biofilms, enhancing its persistence and risk of cross-contamination in food processing environments. The objective of this study was to evaluate the survival of *L. monocytogenes* on cooked ham after refrigerated storage and gastrointestinal digestion.

Métodos/Methods

Three different strains of *L. monocytogenes* (L1C5, L196 and L138) isolated from Food Processing Environments (FPEs) in meat companies were used. Survival and transfer of planktonic and biofilm *L. monocytogenes* cells on vacuum-packed cooked ham stored at 7 °C for 7 days, followed by simulated gastrointestinal digestion (GID) were evaluated to assess their potential impact on listeriosis risk as shown in Figure 1.

Resultados/Results

The main findings of this study were: (i) an average 14.07% transfer rate from biofilm to cooked ham after 90 seconds of contact; (ii) and enhanced growth and survival under biofilm conditions and refrigeration storage; (iii) a less survival of planktonic cells than biofilm cells to GID; (iv) a protective effect of cooked ham matrix on *L. monocytogenes*; and (v) inter-strain variability. Additionally, the pathogen survived gastric acid conditions (pH 2 and 3 achieved with HCl, with important differences between them) in both planktonic and biofilm states.

Conclusión y Relevancia/Conclusions and relevance

This study highlights the urgent need for rigorous cleaning and disinfection in food industries to prevent *L. monocytogenes* contamination and spread. One of the most probable routes of Listeria contamination of foods in the industry, i.e. from surfaces, makes the pathogen more resilient to GID, with important implication in consumers with hypochlorhydria condition.