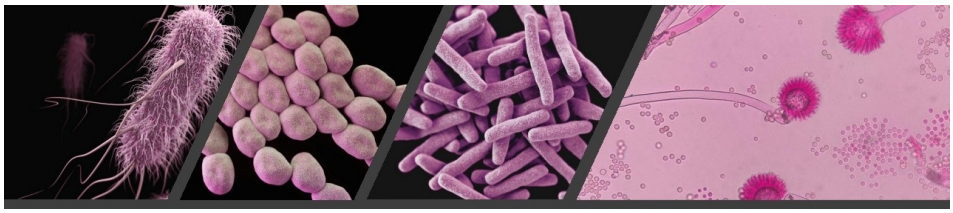

Contribution ID: **155** Type: **Oral presentation**

Listeria monocytogenes: Survival strategies in food processing environments

Friday 12 September 2025 09:00 (45 minutes)

Listeria monocytogenes poses a significant risk, especially in ready-to-eat (RTE) foods, as it can grow at refrigeration temperatures, unlike many other pathogens. This species survives in a variety of harsh environments, including the food processing environment. Long-term survival of Listeria is usually addressed as persistence and the mechanisms are still unelucidated. One trigger of *Listeria* survival is seen in biofilm formation that consists of microbial communities attached to surfaces, embedded in a protective matrix. In food processing facilities, these biofilms can form on equipment, conveyor belts, storage bins, and drains. We found 9-12% of sampling sites carrying a true biofilm in food operations. We have studied the biofilm forming capacity of *L. monocytogenes* in various environments and found *Listeria* being a weak biofilm former. Once in a biofilm, *Listeria* is less susceptible to cleaning agents, disinfectants, and even physical removal, making it extremely difficult to eradicate from the environment. An intriguing question is how Listeria co-colonize biofilms. Data show that other species such as Pseudomonas are drivers of biofilm formation, obviously scarcely in interaction with *Listeria* residing in the same biofilm. We further looked into the genome of persisting clones of *L. monocytogenes* by browsing a database storing more than 17000 *L. monocytogenes* genomes. A thorough bioinformatic analysis revealed that single genetic markers explaining persistence do not exist. Conclusively, survival of *Listeria* in food processing environments is more likely explainable due to failures of hygiene practices than by particular genetic features allowing some clones to persist.

Keywords

Registration ID

ECVM25-184

Professional Status of the submitter, who is also the speaker

Professor

Authors: WAGNER, Martin (Center for Food Safety and VPH, Department for Farm Animals and Food Systems Science, University of Veterinary Medicine, Veterinärplatz 1, 1210 Vienna; Austrian Competence Center for Feed and Food Quality, Safety and Innovation, 3430 Tulln); ALTEIO, Lauren (Austrian Competence Center for Feed and Food Quality, Safety and Innovation, 3430 Tulln); SPIEGEL, Felix (Austrian Competence Center for Feed and Food Quality, Safety and Innovation, 3430 Tulln); PRACSER, Nadja (Center for Food Safety and VPH, Department for Farm Animals and Food Systems Science, University of Veterinary Medicine, Veterinärplatz 1, 1210 Vienna); VOGLAUER, Eva M. (Austrian Competence Center for Feed and Food Quality, Safety and Innovation, 3430 Tulln); RYCHLI, Kathrin (Center for Food Safety and VPH, Department for Farm Animals and Food Systems Science, University of Veterinary Medicine, Veterinärplatz 1, 1210 Vienna); STESSL, Beatrix (Center for Food Safety and

VPH, Department for Farm Animals and Food Systems Science, University of Veterinary Medicine, Veterinärplatz 1, 1210 Vienna)

Presenter: WAGNER, Martin (Center for Food Safety and VPH, Department for Farm Animals and Food Systems Science, University of Veterinary Medicine, Veterinärplatz 1, 1210 Vienna; Austrian Competence Center for Feed and Food Quality, Safety and Innovation, 3430 Tulln)

Session Classification: Keynote Lecture

Track Classification: Keynote Lecture