

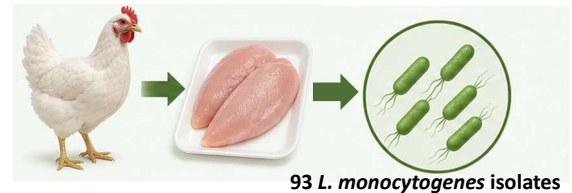
Phenotypic profiling of biofilm formation and antibiotic susceptibility in poultry-derived *Listeria monocytogenes* isolatesEvangelia A. Karamani ¹, Eirini Kerousi ², Margarita Adosidi ², Georgios Vafeiadis ², Ioannis S. Boziaris ¹, Efstathios Giaouris ^{2,*} and Foteini F. Parlapani ¹¹ Laboratory of Marketing and Technology of Aquatic Products and Foods, Department of Ichthyology and Aquatic Environment, School of Agricultural Sciences, University of Thessaly, 38446 Volos, Greece;² Laboratory of Food Microbiology and Hygiene, Department of Food Science and Nutrition, School of the Environment, University of the Aegean, 81400 Myrina, Lemnos, Greece

BACKGROUND & AIM

- Listeria monocytogenes* is a foodborne pathogen of major public-health importance, and poultry products can act as a reservoir.
- Biofilm formation may support persistence on processing equipment and food-contact surfaces, while antimicrobial resistance (AMR) complicates control and treatment.
- This study aimed to evaluate biofilm-forming ability and antibiotic susceptibility in poultry-derived *L. monocytogenes* isolates.

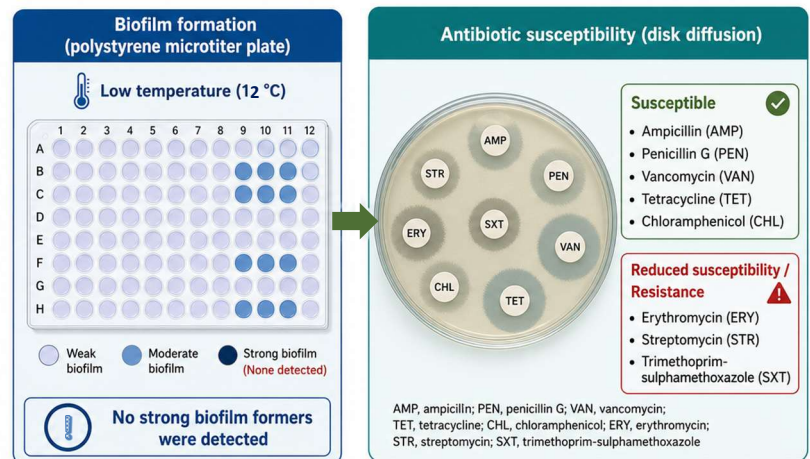
METHODS

- Biofilm formation was assessed on polystyrene microtiter plates at 30 °C for 48 h and 12 °C for 120 h using crystal violet staining.
- Antibiotic susceptibility was tested by disk diffusion against ampicillin, penicillin G, trimethoprim-sulphamethoxazole, vancomycin, erythromycin, streptomycin, tetracycline, and chloramphenicol.



RESULTS

- Most isolates were weak biofilm formers under both conditions, and a subset became moderate biofilm formers at 12 °C; no strong biofilm producers were detected.
- The isolates were generally susceptible to first-line anti-listerial antibiotics, but erythromycin and streptomycin resistance and trimethoprim-sulphamethoxazole resistance were observed in subpopulations.
- No consistent correlation was found between biofilm biomass and antibiotic susceptibility.



CONCLUSIONS & FUTURE PERSPECTIVES

- Poultry-derived *L. monocytogenes* isolates showed weak-to-moderate biofilm formation and mostly favorable antibiotic susceptibility, but resistant subgroups highlight the need for ongoing surveillance.
- Future studies could expand this phenotypic characterization to include *in situ* plant isolates, multispecies biofilms, and genomic factors associated primarily with macrolide and aminoglycoside resistance, thereby better informing risk assessment and control strategies in poultry processing environments.

ACKNOWLEDGEMENTS

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