

Abstract #21099

Antimicrobial Resistance (AMR) Profiles of Lactic Acid Bacteria (LAB) Isolated from Fermented Meat Products of European Origin.

Bukola Onarinde¹, Junren Zhao², Justine Leonard¹ and Agnieszka Dudkiewicz¹, (1)University of Lincoln, Holbeach, United Kingdom, (2)Guangdong University of Petrochemical Technology, Maoming Shi, China

Introduction: LAB is a diverse group of Gram-positive anaerobic non-spore forming bacteria which play a critical role in food processing and are often added as starter cultures in a wide range of fermented products. Although it is recognised that the food chain plays a significant role in the complex pathway of AMR transmission to human, relatively little is known about the role of the food chain and how much food contributes to the burden of AMR.

Purpose: The aim of this study was to determine the AMR profiles of LAB isolates obtained from fermented food products of European origin.

Methods: LAB were isolated from chorizo, ham, salami and sausage and was subjected to 18 different antibiotics using the disk diffusion method. The diameter of inhibitory zones was measured after incubation at 37°C under anaerobic conditions.

Results: Antibiotic susceptibility profile of 40 LAB isolates revealed that 100% of isolates were resistant to nalidixic acid, 93% to vancomycin, 90% to cefoxitin, 88% to colistin and 83% to polymyxin B. Over 70% percent of isolates tested, show sensitivity to streptomycin (82%), bacitracin (75%), erythromycin (73%), ampicillin (73%), imipenem (73%) and rifampicin (70%). In terms of multiple resistance to antibiotics, our results show that 95% (38/40) of isolates were resistant to at least 4 antimicrobial agents and the highest AMR index recorded in our study was 0.89 while 0.11 was the lowest value recorded.

Significance: Determination of AMR profiles of LAB as the dominant microbial community in fermented products is highly important in terms of identifying and understanding mechanisms of persistence and spread of resistance genes within the food supply chain microbial community. The results obtained here highlights the need for continuous monitoring and identification of practices that could be reviewed in order to control and prevent further spread of AMR in the food supply chain.

Topic Selection:

Poster Session 2 – Antimicrobials; Beverages and Water; Dairy and Other Food Commodities; Food Toxicology; Meat and Poultry; Pathogens; Sanitation; Seafood

Slot:

P2: Thursday, April 25, 2019: 10:00 AM-3:30 PM

Submitter's E-mail Address:

bonarinde@lincoln.ac.uk

Preferred Presentation Format:

Poster

Category:

Antimicrobials

First Author

Presenter

Primary Contact

Bukola Onarinde
University of Lincoln
Holbeach,
United Kingdom
Email: bonarinde@lincoln.ac.uk

Second Author

Junren Zhao
Guangdong University of Petrochemical Technology
Maoming Shi,
China
Email: Juzhao@lincoln.ac.uk

Third Author

Justine Leonard
University of Lincoln
Holbeach,
United Kingdom
Email: jleonard@lincoln.ac.uk

Fourth Author

Agnieszka Dudkiewicz
University of Lincoln
Holbeach,
United Kingdom
Email: adudkiewicz@lincoln.ac.uk