Bacterial adhesion on food contact material surfaces

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Interactions between bacteria and food contact material surfaces [1] play an important role in the field of food safety. Microbial contamination of food-contact surfaces is an ongoing concern for the food industry. Poor sanitation of food contact surfaces, equipment, and processing environments has been a contributing factor in food borne disease outbreaks. The objective of this study is to identify the most susceptible kitchen surfaces to bacterial adhesion. We analysed the adhesion rate of *E. coli, P. aeruginosa* and *S. aureus* on common kitchen food contact materials e.g. polyethylene terephthalate, silicone, aluminium, Teflon and glass. Our results have shown that from adhesion point of view the most hygienic materials are Teflon and aluminium. Teflon possesses low adhesion due to its hydrophobicity and aluminium due to its low roughness. Contrary to that the most predominant adhesion has been analysed on PET and glass surfaces, due to high roughness. Contamination of food contact materials, due to bacteria presence is one of the main causes of foodborne outbreaks. Therefore selection of proper material with lowest adhesion potential is the best strategy to prevent bacterial adhesion.

[1] K. Bohinc, G. Dražić, R. Fink, M. Oder, M. Jevšnik, D. Nipič, K. Godič Torkar and P. Raspor, *Int. J. of adhesion and adhesives*, 2014, **50**, 265.