



**foods**



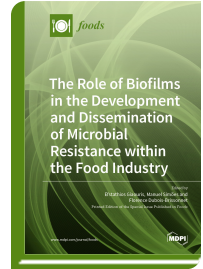
*Special Issue Reprint*

## **The Role of Biofilms in the Development and Dissemination of Microbial Resistance within the Food Industry**

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Biofilms are multicellular sessile microbial communities embedded in hydrated extracellular polymeric matrices. Their formation is common in microbial life in most environments, whereas those formed on food-processing surfaces are of considerable interest in the context of food hygiene. Biofilm cells express properties that are distinct from planktonic ones, in particular, due to their notorious resistance to antimicrobial agents. Thus, a special feature of biofilms is that once they have developed, they are hard to eradicate, even when careful sanitization procedures are regularly applied. A large amount of ongoing research has investigated how and why surface-attached microbial communities develop such resistance, and several mechanisms can be acknowledged, such as heterogeneous metabolic activity, cell adaptive responses, diffusion limitations, genetic and functional diversification, and microbial interactions. The articles contained in this Special Issue deal with biofilms of some important food-related bacteria (including common pathogens such as *Salmonella enterica*, *Listeria monocytogenes*, and *Staphylococcus aureus*, as well as spoilage-causing spore-forming bacilli), providing novel insights into their resistance mechanisms and implications, together with novel methods (e.g., use of protective biofilms formed by beneficial bacteria, enzymes) that could be used to overcome resistance and thus improve the safety of our food supply and protect public health.



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