

THE RISK OF BIOFILM FORMATION IN THE FOOD INDUSTRY AND PREVENTION METHODS

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Biofilm, is a mixture of different microorganisms that are held together and protect by glue-like carbohydrates, occurs because of the adherence ability of microorganisms to the surface easily. The formation of a biofilm is determined not only by the nature of the attachment surface, but also by the characteristics of the microbial cell. Environmental factors are also effective to form of the biofilm. The biofilm can be viewed as a survival mechanism which can lead to biofouling, contamination and corrosion. Extracellular polymeric substances (EPS) are produced by some microorganisms and biofilm is one of them which contain polysaccharides, proteins, phospholipids, teichoic and nucleic acids. Biofilm formation causes some problems in the food industry, thus many industrial companies struggle with biofilm and its structure like slime. Microbial attachment to surfaces which contact with foodstuffs is a rather fast. Hence, these exopolysaccharides become a basis of food borne diseases. It is thought that more than one reason causing the foodborne diseases but some changes taking place in the structure of enzymes and genetical codes of microorganisms when they are found in biofilm matrix regard as the most possible hypothesis in contrast with planktonic forms. Prevention from the microbial growth and biofilm formation is one of the most important hygiene factors in the food industry due to difficulties of cleaning the surfaces from biofilm and suchlike biological residues. In this review, it is mentioned about the mechanism of biofilm formation and its prevention methods in the food industry.

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