Use of enzymatic detergents to remove biofilms in food industries

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In the last decade concern about the presence of biofilms in food processing plants has increased. Biofilms in the environment of food processing plants represent a threat to food quality, safety and shelf-life. These biofilms can host pathogenic bacteria such as Listeria, Salmonella and Campylobacter, as well as spoilage microorganisms. Additionally, biofilms show some degree of resistance to conventional detergents and disinfectants that hinders their removal and favors re-growth. Therefore, there is a need for sanitizing products and protocols that are highly efficient at removing biofilms and suitable for food processing plants. Enzymatic detergents have recently been introduced as an alternative to conventional products against biofilms in food processing plants. These detergents contain one or more enzymes that disrupt the EPS of the biofilms, making the microorganisms present in the biofilm more vulnerable to disinfectants. Enzymatic detergents have been proved to be more efficient in degrading biofilms than conventional detergents reducing both, EPS content and bacterial counts. Finally, higher efficiency on biofilm removal was observed after completing the entire sanitizing procedure (cleaning + disinfection) using an enzymatic detergent than a conventional detergent. These tests confirm the great potential of enzymatic detergents to remove biofilms.