

USE OF ENZYMATIC AGENTS IN THE CONTROL AND REMOVAL OF BIOFILMS IN FOOD INDUSTRY

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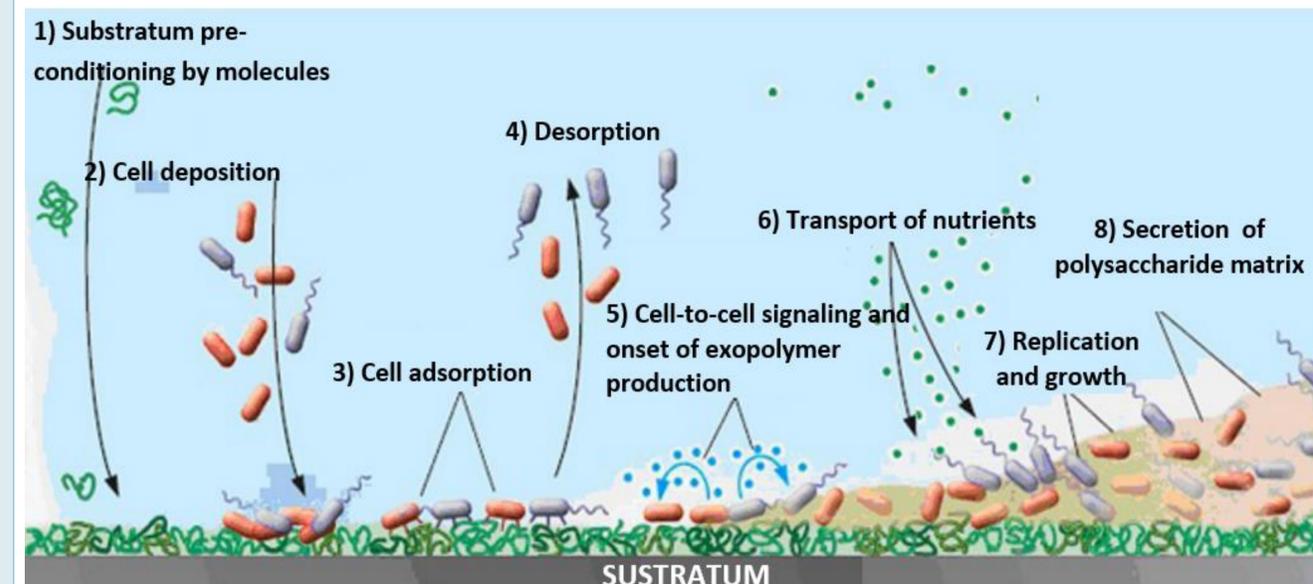
I. INTRODUCTION

The control and removal of biofilm strategies are included in cleaning and disinfection plans of food industries. These strategies use chemical agents that can generate both microorganism resistance¹ and effluents with high environmental impact². Therefore, nowadays, it is being investigated another strategies in order to solve those problems. One of these new strategies (called “eco-friendly”) is the use of enzymatic agents.

II. OBJECTIVE

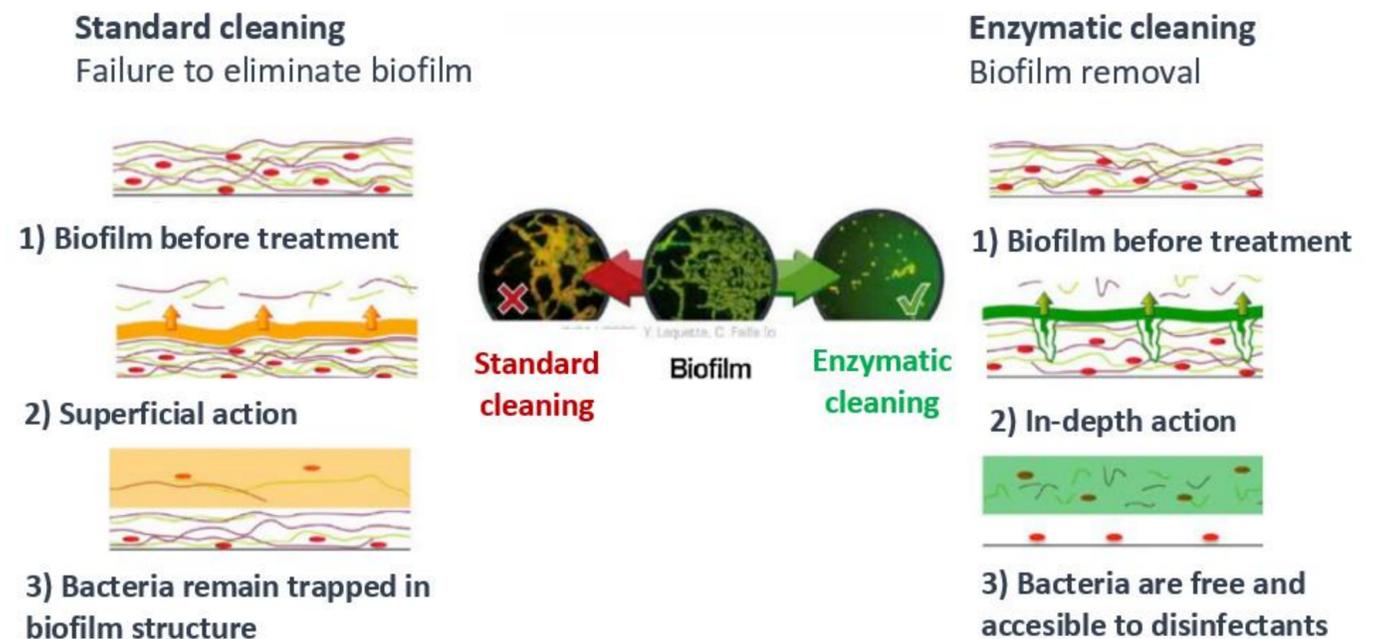
The main objective of this review is to understand how enzymatic agents act to control and remove the biofilms, their advantages and disadvantages.

III. BIOFILM FORMATION ³



IV. ENZYMATIC AGENTS ACTING WAYS ⁴

- 1) Avoiding microorganisms adherence by hydrolyse organic matter (Cleaning)
- 2) Breaking down the exopolysaccharide (EPS) matrix of the biofilm (Cleaning)
- 3) Disinfection



V. CONCLUSION

Enzymatic agents have similar or even more efficiency than chemical agents. To achieve it, is necessary to previously know the organic matter and microorganisms (and their EPS components) associated to the food process in order to define the proper enzymatic agent. Their action like cleaners has been deeply studied in many articles , but their action like disinfectants aren't available. The last, is nowadays perform by private companies, but the results will be probably subjected to obtain a patent.

THE CURRENT TREND IS USE THE COMBINATION OF BOTH AGENTS DUE TO HIGH COST OF THE ENZYMATIC AGENTS BECAUSE THE GREAT ADVANTAGE OF ENZYMATIC AGENTS IS PROVIDE A DEEP CLEANING AND OPTIMAL SUBSEQUENT DISINFECTION.

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