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Bioprotectives and Their Application in Food Products

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Aim of the study: In this review, it is aimed to emphasis bioprotectives, advantages of using on food biopreservation and the importance of biopreservative agents, antimicrobial properties of lactic acid bacteria and using bacteriocins as food biopreservatives.

Results: Biopreservation means the addition of natural microflora and antimicrobial products to foods in order to extend the shelf life of foods and increase their safety. Many scientific evidences underline the great potential of such an approach to combat pathogenic or spoilage microorganisms in various food products such as meat, fish, bakery products, and vegetables. During the last decade, there has been increasing interest in the development of lactic acid bacteria bioprotective cultures as alternative to chemical additives in food. Lactic acid bacteria is a generally recognized as safe (GRAS) microorganism and belongs to the qualified presumption of safety list in Europe. They have the capacity to produce a wide variety of antimicrobial compounds such as organic acid, diacetyl, acetone, hydrogen peroxide, reuterin, antifungal peptides and bacteriocins which can be used as a probiotic or a bio-protective agent. Lactic acid bacteria have capacity to inhibit unwanted bacteria and increase the shelf life of products. In conclusion, biopreservation emerges as one of the most promising current food preservation techniques and lactic acid bacteria may be considered as biopreservative agents as they can protect food from microbial spoilage and pathogenic microorganisms by competitive growth, and synthesis of antagonistic compounds such as organic acids and bacteriocins.

Keywords: Bioprotectives, lactic acid bacteria, bacteriocins, food security, biopreservation.