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THE ANTIFUNGAL ACTIVITY OF ORGANIC ACIDS PRODUCED BY LACTIC ACID BACTERIA

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Lactic acid bacteria (LAB) are used for fermentation of especially traditional foods and they produce some organic compounds (lactic acid, acetic acid, hexanoic acid, hydrogen peroxide, diacetyl, CO_2 and bacteriocin) as they are fermenting the glucose found in the food. These by-products inhibits some pathogen microorganisms but especially organic acids are effective on moulds. The presence of suchlike organic acids result in a delay in appearance of the mould mycelia on the surface of the food and also mycotoxin production is not observed because of the delay in fungal growth. According to these scientific findings, some lactic acid bacteria and the organic acids-produced from them- can be used for antifungal applications on the food. It is known that organic acids produced during the growth of lactic acid bacteria play a major role in antagonism towards moulds but on the other hand, the antifungal activity of the organic acids are influenced by the environmental conditions including the nature of the matrix and the pH. One of the biggest problem of the microbial spoilages to the food is fungal contamination but the problem can be prevented by using some LAB with supplying the extrinsic factors as appropriate enough for production of desired organic acids by LAB. It is thought that the shelf life of the food is also extended by this application. In this review, antifungal activity of some organic acids, their availability for usage as a food preservative and their effect mechanisms on the fungus and mycotoxins are discussed.

Keywords: Antifungal, lactic acid bacteria (LAB), organic acids, mycotoxin, shelf life

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