

Isolation and Characterization of Probiotic Lactic Acid Producing Bacteria in Kenyan Traditionally Fermented Milk

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Abstract

Lactic acid producing bacteria are found in decomposing and fermenting plants and milk products. They produce lactic acid as a major metabolic end product of carbohydrate fermentation. Lactic acid producing bacteria in fermented food provide several benefits to the body. Due to their general recognition as safe (GRAS) status they are used in industries as they are very common in food and they contribute a lot to the healthy microbiota of both animal and human mucosal surfaces. In industrial fermented products these LAB is used as starter cultures in products like yoghurt. Kenyan communities such as the Maasai, Kalenjin, Turkana and the Kikuyu ferment their own milk adding different substances which differ from community to community. or most of these communities fresh and fermented milk is a staple part of their diet. These experiments seek to isolate and characterize LAB found in traditionally fermented milk from communities around Kenya and to identify if they are similar to those that are artificially added to industrial milk. Different methods were used to identify lactic acid producing probiotic bacteria in fermented milk including gram staining, catalase tests, sodium chloride tolerance test amongst others in this study. Strains of lactic acid producing bacteria isolated were from Family Lactobacilli and Family Streptococci. The quantity differed from community to community with lactobacilli being the dominant isolate from the Maasai culture and streptococci being more dominant in the Kalenjin isolate. This proved that traditionally fermented milk offers a wider range of lactic acid producing bacteria than industrial starter cultures. **Key words:** Lactic acid producing bacteria; traditional milk; fermentation