

Publication

African fermented dairy products - Overview of predominant technologically important microorganisms focusing on African *Streptococcus infantarius* variants and potential future applications for enhanced food safety and security

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Milk is a major source of nutrients, but can also be a vehicle for zoonotic foodborne diseases, especially when raw milk is consumed. In Africa, poor processing and storage conditions contribute to contamination, outgrowth and transmission of pathogens, which lead to spoilage, reduced food safety and security. Fermentation helps mitigate the impact of poor handling and storage conditions by enhancing shelf life and food safety. Traditionally-fermented sour milk products are culturally accepted and widely distributed in Africa, and rely on product-specific microbiota responsible for aroma, flavor and texture. Knowledge of microbiota and predominant, technologically important microorganisms is critical in developing products with enhanced quality and safety, as well as sustainable interventions for these products, including Africa-specific starter culture development. This narrative review summarizes current knowledge of technologically-important microorganisms of African fermented dairy products (FDP) and raw milk, taking into consideration novel findings and taxonomy when re-analyzing data of 29 publications covering 25 products from 17 African countries. Technologically-important lactic acid bacteria such as *Lactococcus lactis* and *Streptococcus infantarius* subsp. *infantarius* (Sii), *Lactobacillus* spp. and yeasts predominated in raw milk and FDP across Africa. Re-analysis of data also suggests a much wider distribution of Sii and thus a potentially longer history of use than previously expected. Therefore, evaluating the role and safety of African Sii lineages is important when developing interventions and starter cultures for FDP in Africa to enhance food safety and food security. In-depth functional genomics, epidemiologic investigations and latest identification approaches coupled with stakeholder involvement will be required to evaluate the possibility of African Sii lineages as novel food-grade *Streptococcus* lineage.

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