Tropentag, September 10-12, 2025, hybrid conference

"Reconcile land system changes
with planetary health"

Sustainable indigenous mursik fermentation for healthy diets and planetary health

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Abstract

Mursik is a milk-based traditional fermented food, whose production follows precise procedures that have been passed down from one generation to the next. Despite widespread acceptability of mursik, the science underpinning its fermentation processes in different contexts is poorly understood. The study aimed to highlight aspects of the traditional production practices that are essential for the successful completion of the fermentation and the derivation of a flavor that is attractive to the local population. In addition, the study explored mursik's contribution to safe and healthy diets while ensuring environmental sustainability.

Conducted among the agropastoralists in Kenya, the study adopted a sequential QUAL-QUAN mixed methods design. Farmers reported on the production of mursik through either traditionally adapted batch (72 hrs) or continuous (144 hrs to months) fermentation. An important aspect of the traditional fermentation process involves the sooting of the inner layer of the calabash with selected plant species stem glowing splints to augment organoleptic properties. A crucial aspect of smoking technology is the content of harmful compounds in the finished products like polycyclic unsaturated hydrocarbons. Whereas the permissible content of these compounds in food products is regulated by law, the culturally held knowledge in mursik processing lacks evidence on smoking associated safety. Even so, farmers highlighted food safety linked to the smoking of calabashes, based on their generational anecdotal observations. Thus, the study reports on the cultural evolution of smoking plants preferences and the rationale behind these preferences, and efforts towards their conservation.

Study findings reveal different contexts in which mursik is consumed. It is a significant dietary beverage among pregnant and breastfeeding mothers and children aged 6 months. Mursik is consumed as a main meal (or part of it), as a snack, or utilised in cultural celebrations. In addition, there is an increased popularity of the product in urban restaurants, supermarkets, and milk ATMs. Given the growing demand for mursik, addressing the health concerns while maintaining the traditional gustatory attributes of mursik is imperative for both safety and quality in its production.

Keywords: Complementary feeding, diet, fermented foods, food security, Milk, mursik, nutrition

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