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EDITED AND REVIEWED BY
Rosane Freitas Schwan,
Universidade Federal de Lavras, Brazil

*CORRESPONDENCE

Dele Raheem,
✉ braheem@ulapland.fi
António Raposo,
✉ antonio.raposo@ulusofona.pt

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Editorial: Traditionally produced fermented foods and innovative technological processes

Dele Raheem^{1*}, Ariana Saraiva², Conrado Carrascosa² and António Raposo^{3*}

¹Arctic Centre, University of Lapland, Rovaniemi, Finland, ²Department of Animal Pathology and Production, Bromatology and Food Technology, Faculty of Veterinary, Universidad de Las Palmas de Gran Canaria, Las Palmas de Gran Canaria, Spain, ³CBIOS (Research Center for Biosciences and Health Technologies), Universidade Lusófona de Humanidades e Tecnologias, Lisboa, Portugal

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Editorial on the Research Topic

Traditionally produced fermented foods and innovative technological processes

Food fermentation is an ancient practice that uses microorganisms and enzymes to alter the major and minor components of foods. These transformed components were shown to have preservation properties as well as health advantages (Tofalo et al., 2020). Indigenous and traditional meals in many cultures sometimes rely on wild strains of bacteria in fermented foods to increase the shelf life of their substrates (Borremans et al., 2020; Izzo et al., 2020). Fermented foods that are good for the gut are gaining popularity, especially given the mounting proof of the gut-brain axis relationship (Dahiya and Nigam, 2022; Ribeiro et al., 2022). Therefore, *Traditionally Produced Fermented Foods and Innovative Technological Processes* aims to bring more awareness to less utilized fermented food products by revisiting their processing techniques with the possibility of advancing innovative techniques that will ensure quality. When the right quality of fermented food products is consumed they were shown to have beneficial effects on the immune system (Kocot and Wróblewska, 2021).

In this Research Topic, there are four articles—two original research articles and two review articles that delve into various fermented foods and beverages. The Tuganbay et al. investigated the utilization of *Lactocaseibacillus rhamnosus* (LGG) and *Cryptococcus laureanti* yeast in the production of kurt, otherwise known as kurt, from Kazakhstan. In this study, higher total solid yield, an increase for both the protein content and syneresis were also observed in kurt as a fermented dairy product. The Yeboah et al. was on the use of indigenous tigernut and millet from Ghana to produce a fermented tigernut-based beverage. The beverage was characterized by its physico-chemical, microbial quality, functional properties, and shelf life. The authors emphasized the need for further research to improve the physicochemical and textural properties of the “brukina” beverage.

The Ghatani et al. conducted an extensive search of the literature from 1991 to 2022 on various fermented vegetable and dairy products highlighting their health benefits and their possible contribution to the treatment of obesity, diabetes, and cardiovascular diseases. The Oluwole et al. was on traditional wine from palm trees. A wide range of palm wine otherwise

known as toddy or by several local names in different countries was discussed for its microbial, nutritional attributes and health impacts. The authors suggested the need for safe practices during the processing methods for palm wine.

Due to the fact that fermentation is driven by microbial consortia that result in health-promoting characteristics, a deeper knowledge of the processing steps in fermented foods demands novel technological approaches. The inclusion of starter cultures in such techniques will improve the quality and safety of fermented foods (Vinicius De Melo Pereira et al., 2020). To completely reap the benefits of fermentation, which leads to improved nutritional and quality attributes in fermented foods, the procedure must be standardized.

The inherent attributes of these fermented foods and beverages on health impacts and food preservation should drive future research, innovation, and development. Henceforth, a better understanding of these traditionally produced foods will help us gain further insights into the mechanisms that are involved in the treatment of diseases with prebiotics and probiotics from fermented foods. This will be required to develop strategies that may be useful for the management of chronic gastrointestinal diseases in the near future (Cuamatzin-García et al., 2022).

In order to fully exploit these fermented products on an industrial scale, the scientific understanding of these processes is crucial.

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