

TRADITIONAL RAW CAMEL MILK FERMENTATION KNOWLEDGE AS FOOD SECURITY ALTERNATIVE IN TAMANRASSET REGION AS HOT AND REMOTE AREA, SURVEY INVESTIGATION AND METAGENOMIC STUDY OF THE MICROBIAL CONSORTIA

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For centuries, humans' lives have been affected by many factors, including socio-economics, politics, and climate change, placing food security at the top of the concerns' list, especially in arid and semi-arid areas where the scarcity of nutritious resources persists. However, some animals, such as dromedaries (*Camelus dromedarius*), can withstand harsh conditions and provide milk to desert dwellers. These people have developed methods to extend the shelf life of this valuable source of life through fermentation. In this study, we aim to explore the knowledge of camel milk fermentation in the region of Tamanrasset and study the microbiota of camel's milk with high acidification potential through a metagenomic approach, which is expected to be more adapted to the hot, dry climate conditions in this region in southern Algeria. The initial findings of the survey study revealed that 76% of the population affirms the possibility of camel's milk fermentation, while 67 % of them are familiar with different ways of transforming camel milk, contributing to the lifestyle of the nomadic people and their adapted methods of extending the shelf life of camel milk. Furthermore, the metagenomic analysis is planned to dive into species-level analysis and provide the best consortium in terms of acidification capacity, which can be nominated for biotechnological purposes. The ancient tradition of using camel milk as a food security resource encourages us to discover the key to this adaptation to severe conditions and highlights camel milk as a strategic bioresource in the face of environmental challenges.