

Value addition, Microbiological and Physico-chemical characteristics of a traditional yogurt ‘*Ergo*’ in the Sidama region, Southern Ethiopia

Project description

Ethiopia has the largest livestock population in Africa with 70 million estimated cattle population, of this; the female cattle constitute about 56% (CSA, 2021/2022). Dairy development in the country has a great deal of promise due to its large livestock population, the favourable climate, and the relatively disease-free environment for livestock rearing. The traditional yogurt called ‘*Ergo*’ is an important milk product for food security in the Sidama region and all areas of the country due to its special taste which might be an effect of diversity of microorganisms involved in fermenting process compared with the commercial yogurt. In a smallholder household this product is provided for children as a supplementation to the food they eat as traditional bread. In the region malnutrition has been reported as contributing factor for stunted children growth. Improving the nutrition is therefore of paramount importance. Several studies indicated that supplementation of locally provided food with fruit and other minerals could improve the vitamin, mineral and overall nutritional quality which are particularly deficient in children nutrition. Zinc (Zn) is essential for normal immune function particularly for children, and physical growth and the structure and activity of more than 200 enzymes. The yogurt supplemented with fruits coagulated at a lower acidity and faster than natural yogurt. Other findings also indicated that, the numbers of lactic acid bacteria in supplemented yogurts has higher compared to non supplemented samples. In addition, the supplementation of fruits also increases the amount of unsaturated and polyunsaturated fatty acids in comparison with natural yogurt (BoyCheVa *et al.*, 2011). In Ethiopia, there are no practices of fruit supplementation in traditional fermented yogurt. Therefore, the objective of this study will be investigating the effects Mango (*Mangifera indica*), Papaya (*Carica papaya*) fruits and mineral (Zn) supplementation on the acidity dynamics, lactic acid bacterial counts and diversity, and fatty acid composition of yogurt compared with natural yogurt from southern part of Ethiopia. For this study, various laboratory experiments such as Physicochemical analyses; (acidity, and syneresis), total bacteria count, molecular confirmation of the isolates by PCR and sequencing of the gene will be carried out to characterize the isolates. Furthermore, phylogenetic analysis will be conducted using R studio software to evaluate the genetic similarity from previously identified isolates. The output of this study can be used as an alternative food source that supports sustainable food security in the region.