

Abstract

As at 2020, Kenya was ranked as the best camel milk producer in the world, with an annual production of 1.125 million tonnes. Somalia and Mali are the second and third best camel milk-producing countries with an annual production capacity of 0.969 and 0.271 million tonnes, respectively. Camels thrive and produce a significant amount of milk when the other species living in harsh climatic conditions succumb. Despite the high volumes of camel milk produced each year, about half (50%) of the camel milk produced goes to waste. This is due to poor hygienic handling and minimal or no value addition and processing of camel milk into products such as yoghurt. In Kenya, there are a limited number of camel milk yoghurt products only available through the cottage industry. The main problem hindering the production and penetration of camel milk yoghurt into the market is its unacceptable texture, mouthfeel and viscosity that do not conform to what consumers are familiar with in bovine milk yogurt. Camel milk yoghurt produced under similar conditions to bovine milk yoghurt is known to have a weak structure and thin consistency. This project aimed to improve the physicochemical properties of camel milk yoghurt by incorporating various stabilising agents. Camel milk yoghurt formulations were produced using varying concentrations of starches (corn starch or modified starch) from 2, 2.5 or 3% and use of 0.075% calcium chloride. The physicochemical properties (TTA, pH and viscosity) of camel milk yoghurt were monitored during fermentation from 0-6 hours. The syneresis and water holding capacity and TTA, viscosity, and pH were monitored during storage after 1, 7, 14 and 21 days. Camel milk yoghurt with 3% corn starch recorded the highest viscosity of 0.82 Pa.s which is twice that of bovine milk yoghurt, which recorded a viscosity of 0.35 Pa.s. The addition of calcium chloride led to a further increase in viscosity of camel milk yoghurt of 0.96 Pa.s (three times bovine milk yoghurt) but also increased the syneresis of camel milk yoghurt. Camel milk yoghurt containing 2.5% modified starch and 0.075% calcium chloride showed the best viscosity results on storage and sensory evaluation.