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ABSTRACT

Yoghurts were produced by blending reconstituted powdered cow milk (100 g of powdered cow milk (CM) : 0.5 litres of water) with 25 % and 50 % coconut milk (CCM) and a control (100 % cow milk) before fermentation. After fermentation for 16 h at room temperature, the yoghurts were subjected to two heat treatments (thermization) namely, 75 °C thermization and 80 °C thermization and a control (unthermized). The proximate, physicochemical, vitamin and microbiological quality of yoghurt samples were investigated during storage at room temperature for 5 weeks. The results obtained, revealed that in each of the three formulations of yoghurt, proximate composition, titratable acidity (TTA), total solids, free fatty acids (FFA), viscosity, microbial load and vitamins decreased as the temperature of thermization increased. The pH and moisture increased from 4.30 and 82.36 %, respectively with increase in thermization temperature to 4.59 and 83.39 %, respectively. Yoghurts samples from 50 % cow milk (CM) + 50 % coconut milk (CCM) had the highest moisture content (83.39 %) and lowest total solid content (17.84 %) compared to 82.98 % and 18.16 %, respectively from 75 % cow milk (CM) + 25 % coconut milk (CCM) and 82.92 % and 18.28 %, respectively from 100 % cow milk (CM). Titratable acidity increased significantly ( $p < 0.05$ ) with increase in percentage coconut milk (0.77 for 100 % cow milk (CM), 0.82 for 75% cow milk (CM) + 25 % coconut milk (CCM) and 0.87 for 50 % cow milk (CM) + 50% coconut milk (CCM)). There was significant ( $p < 0.05$ ) decrease in pH as the percent coconut milk increased (4.48 for 100 % cow milk (CM), 4.40 for 75 % cow milk (CM) + 25 % coconut milk (CCM) and 4.30 for 50 % cow milk (CM) + 50 % coconut milk (CCM)). The highest viscosity of  $282.59 \pm 2.46$  cPs was obtained for unthermized 100 % cow milk which also had the highest protein content of  $3.84 \pm 0.11$  %. Free fatty acid increased significantly ( $p < 0.05$ ) with increase in percent coconut milk and during storage. B-complex vitamins (B1, B2 and B3) increased significantly ( $p < 0.05$ ) as the storage time increased while the antioxidant vitamins (vitamin C and E) decreased significantly ( $p < 0.05$ ). Vitamin A was not detected in any of the samples. Total bacterial count increased significantly ( $p < 0.05$ ) from  $2.27 \times 10^2$  cfu/ml  $\pm$  0.14 to  $6.77 \times 10^2$  cfu/ml  $\pm$  0.10 on storage within 3 weeks. Thereafter, their numbers reduced. Fungi were detected in all the yoghurt samples but they reduced after one week of storage. Sensory results indicated that yoghurts with coconut milk (CCM) and those thermized at 80 °C had significant ( $p < 0.05$ ) lower consumer preferences.

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