



CHEMICAL, RHEOLOGICAL AND SENSORY CHARACTERISTICS OF PROCESSED CHEESE SPREAD ANALOGUES

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ABSTRACT

The present work was undertaken to assess information on the physico-chemical composition, fatty, texture profile, microstructure and sensory evaluation of processed cheese analogue made by substituting 50% and 100% of butter fat with vegetable fat (peanut cream fat). Both the control processed cheese and the processed cheese spread analogue containing peanut cream were found to be within the composition range of processed cheese. Meanwhile replacing butter fat with vegetable fat at level of 50 and 100% did not considerably affect the chemical composition of cheese analogues. Concentration of total and individual volatile fatty acids of control processed cheese spread were higher than that of processed cheese spread analogue in which milk fat was substituted with vegetable fat at 50 or 100% level. The highest concentration of major short chain volatile fatty acids namely butyric, caproic, caprylic and capric acids were found in control processed cheese spread. Partial substitution of butter fat with peanut cream fat has led to promoted significant modification in the texture, microstructure and sensory properties of processed cheese spread analogue. Control processed cheese spread was firmer than the experimental processed cheese analogue which is related to the presence of high percentage of peanut cream fat. In addition, this treatment decreased the cohesiveness and hardness of the resultant analogue. The size of fat globules increased and the uniformity of their distribution in protein matrix decreased with increased the percentage of vegetable fat used. Control processed cheese spread showed a uniform protein network in which numerous small fat particles were dispersed whilst in processed cheese analogue the fat globules were present in smaller numbers and with greater diameter, a behavior intensified by increasing the proportion of vegetable fat. Control processed cheese spread and processed cheese spread analogue in which butter fat was replaced with peanut cream fat at 50% level had the better sensory characteristics compared with that of analogue made with 100% vegetable fat.

Keywords:

*Processed cheese;
Analogue, sensory,
Texture;
Microstructure;
Peanut cream.*