Title: Relationship between textural properties and sensory qualities of cookies made from medium- and long-chain triacylglycerol-enriched margarines

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Abstract: Background: This study aims to investigate the textural properties and sensory qualities of cookies made from medium and long-chain triacylglycerol (MLCT)-enriched margarines. Margarine with formulations of MLCT: palm olein: palm stearin, 60:30:10 and 70:20:10, were selected to produce cookies. The textural properties of cookies were determined using a texture analyser. Quantitative descriptive analysis (QDA) and acceptance test were carried out to describe the attributes and to evaluate the degree of liking of cookies, respectively. Results: Cookies made from MLCT-enriched margarines showed high values for hardness, fracturability, but also for cohesiveness and adhesiveness. Trained panelists rated the cookies made from MLCT-enriched margarines to be lower as compared to those made from commercial margarine for most of QDA attributes. However, cookies made from MOS 603010 and commercial margarines were scored similarly (P > 0.05) for all acceptance test attributes. Overall acceptability was found to be highly and negatively correlated for hardness, fracturability and cohesiveness (R² > 0.90). Principal component analysis showed that the taste attribute of cookies and the % solid fat content of margarine at 35°C highly influenced the overall quality of the cookies. Conclusion: Cookies made from MLCT-enriched margarines were not successfully produced. However, the findings obtained provide new perspectives in the production of low-calorie bakery fat. © 2010 Society of Chemical Industry.