

Abstract

Chocolate spread is a complex multiphase system of solid-oil suspensions that is made up of a dispersion phase comprising cocoa powder, sugar, fat, milk, and emulsifiers. The purpose of this research is to develop the chocolate spread with different types of vegetable oils such as lab-made VCO, commercial palm kernel oil (PKO), and commercial VCO. The objective was to evaluate the effect of different alternative vegetable oil sources (commercial PKO, commercial VCO, and lab-made VCO) on the lipid properties of chocolate spread. The results of the One-Way ANOVA test confirmed that there were significant differences in the average FFA, IV, and PV across all the samples ($p < 0.05$), indicating that the various types of oils applied indeed have an impact on the lipid properties of the final chocolate spread. Based on the findings, lab-made VCO has the best quality due to its low free fatty acid (1.19%), iodine value (45.58 g of $I_2/100$ g of oil), and peroxide value (0.33 meq/kg). This indicates limited lipid hydrolysis and oxidation which may maintain the nutritional value.

Keywords: Chocolate Spread, Virgin Coconut Oil, Palm Kernel Oil, Chilling-thawing Treatment