

The quality of corn milk-based cheese analogue made with virgin coconut oil as a fat substitute and with various emulsifiers

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Abstract	<p>Cheese analogues can be produced by modifying ingredients to produce low-fat cheese. Low-fat cheese generally has a less preferable texture and taste, so it is used as a fat substitute. Virgin coconut oil (VCO) is commonly used as a fat substitute because it can reduce total cholesterol, triglycerides, phospholipids and low-density lipoprotein (LDL) cholesterol, and increase high-density lipoprotein (HDL) cholesterol in the blood. In this study, we aimed to: 1) determine the effect of VCO concentration on the quality of corn milk-based cheddar cheese analogue; and 2) study the effect of emulsifier type on the quality of the cheese analogue. This research used experimental methods with a randomized group design. Two factors were studied: the concentration of VCO (i.e. 15%, 20%, 25%) and type of emulsifier (Span 80, Tween 80 (1%), Span 80:Tween 80 (1:1)). The observed variables included yield, total solids, total titrated acidity, moisture content, fat content, protein content, and sensory properties. The results showed that an increase in VCO concentration of 15-25% in the cheese analogue-making process increased fat and moisture content, but reduced sensory value. The emulsifiers did not influence the physicochemical variables and sensory properties of the produced cheese analogue significantly. The best cheese analogue was produced using 25% VCO and Tween 80. The characteristics of this product were: 59.93% bb yield, 54.62% moisture content, 30.2 degrees Brix total solids, pH 5.62, 19.96% fat content, 11.51% soluble protein with colour sensory value of 3.84 (yellowish white), scent value of 4.07 (slightly typical of cheese), taste value of 5.48 (slightly salty), texture value of 2.55 (not hard) and favourite value of 4.38 (slightly favourable).</p>
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