EFFECT OF MATURITY LEVEL ON QUALITY AND YIELD OF VIRGIN COCONUT OIL (VCO) AND WHITE COCONUT OIL (WCO)

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ABSTRACT

The raw material for the production of coconut oil is the kernel obtained from the fruit of *Cocos nucifera L.* Level of fruit maturity impacts on extraction yield and physicochemical characteristics of the derived oils. The correct maturity level to be used for VCO and WCO extraction is not adequately studied. Therefore, study was conducted to evaluate the effect of 3 maturity levels (fresh 11 months old, fresh 12 months old, fully matured & 3 weeks seasoned coconuts) on extraction yield and physicochemical properties of VCO and WCO. Copra and desiccated coconut obtained from three maturity levels were tested for moisture content, fat content and free fatty acid content. The VCO and WCO obtained were analyzed for moisture content, free fatty acid content, color, relative density, fatty acid profile, total phenolic content, oil yield and oil recovery percentage. Experimental design used was complete randomized design (CRD). The lowest oil extraction yield was observed in fresh eleven month old coconuts. Fresh twelve month old coconuts and fully matured seasoned coconuts produced similar oil yield percentage. There was no significance difference of moisture, color, free fatty acid, relative density, total phenolic content of coconut oil samples from three maturity levels. Maturity levels showed no effect on physicochemical properties of VCO and WCO. Extracted VCO from the three maturity levels showed significance difference among lauric acid percentage. Fully matured seasoned coconuts had the highest lauric acid content (52.32 %). In white coconut oil showed no significant difference in fatty acids composition among three maturity levels. Fresh twelve months old coconut and fully matured seasoned coconut can be used for VCO and WCO production.

Keywords: Maturity Level, Physicochemical Properties, Virgin Coconut Oil, White Coconut Oil, Yield