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## Effect of coconut variety (*Cocos nucifera* L.) on quality of virgin coconut oil extracted from the dry processing method

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Coconut (*Cocos nucifera* L.) kernel is the base for products such as coconut oil, desiccated coconut and coconut milk. Different types of coconut oil are produced from coconut kernels by changing processing conditions and the status of raw materials. Virgin coconut oil (VCO) is obtained from fresh, mature coconut kernel by mechanical or natural means and is a superior natural edible oil extracted from mixed coconut varieties. The variety of coconut shows diverse characteristics. Therefore, this research focuses on the quality evaluation of VCO extracted from four types of coconut varieties, namely Tall×Tall (TT), Gon Thambili (GT), Ran Thambili (RT), and San Ramon (SR). Mature coconuts from each variety (50 nuts) were collected from Bandirippuwa Estate of Coconut Research Institute, Sri Lanka to extract VCO by cold press oil extraction method. Extractability of VCO, moisture (SLSI 2012), free fatty acid (FFA) (SLSI 2012), fatty acid profile (gas chromatography) (AOCS, 1998) peroxide value (PV) (SLSI 2012), colour (Lovibond scale) (SLSI 2012), total phenolic substances (Galic acid equivalent) (Folin-Ciocalteau reagent method), antioxidant capacity ( $\alpha$ ,  $\alpha$ -diphenyl- $\beta$ -picrylhydrazyl, 0.1 mM) and sun protection factor (SPF) of VCO extracted from each variety were determined. The experiment was arranged as a complete randomized design with three replicates. Data were analyzed using ANOVA and Tukey's test with pairwise comparison by MINITAB 17 software. Oil extractability (58% - 59%), FFA (0.04% - 0.12%), colour (0.43 - 0.93), and fatty acid profile of VCO did not show variation among varieties. A characteristic fatty acid profile was observed from virgin coconut oil from all varieties. A higher concentration of total phenolic substances was observed in GT ( $0.24 \pm 0.03$  mg GAE/100 g) while antioxidant capacity ( $857.19 \pm 14.99$  mg/ml) and SPF ( $8.99 \pm 1.26$ ) were rich in RT. The varietal difference did not affect significantly the physicochemical properties of VCO whereas the antioxidant capacity and SPF of RT are significant from others.

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