

Application of Improved Traditional Wet Method to Produce Good Quality Virgin Coconut Oil in Pilot Scale

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At present virgin coconut oil (VCO) is gaining worldwide popularity as a healthier and versatile oil. The existing processes of the production of VCO are the dry and wet methods. Among those methods, dry method is being practiced on commercial scale in Sri Lanka which involves high labor cost and expensive machineries. Wet methods are used to produce VCO on commercial scale in Philippines. However applicability of wet methods in pilot scale has not been studied in Sri Lanka up to now. Therefore the aim of this study was to investigate the potential of producing VCO by wet methods on pilot scale. Objective of the study was to check the quality and quantity parameters of the VCO produced by wet methods. Two wet methods, namely Modified Kitchen Method (MKM) and Natural Fermentation Method (NFM) were used as treatments with three replicates. Quality and quantity parameters were analyzed with Kruchal Wallis procedure for mean separation. The NFM and MKM had yield percentages as 18.79% and 20.7% and those were not significantly different and both were also not significantly different from the dry expeller method to produce VCO. The oil recovery percentages of NFM and MKM, 48.99% and 56.5% respectively, were significantly lower than the oil extracted by dry method. The results were also very similar in laboratory scale. All the quality parameters were within the Sri Lankan standards specified by SLSI Quality parameters, Moisture percentage, Free Fatty Acid percentage and Peroxide value and Color of VCO produced by MKM and NFM were not significantly different at laboratory scale. The VCO obtained by NFM had significantly high antioxidant value compared to MKM and no detection was observed for the total plate count in VCO obtained by MKM. A peroxide value was not detected in NFM and MKM had significantly low peroxide value and it was lower than the SLSI standards. It is evident from results that the wet methods can be recommended for producing VCO on commercial scale and studies are required to improve the oil recovery percentage.

Keywords: dry expeller method, modified kitchen method, natural fermentation method, virgin coconut oil, wet methods