

The Effect of Moisture Content of Desiccated Coconut on the Quality of Virgin Coconut Oil

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Virgin Coconut Oil (VCO) is one of the leading high value coconut products in the world. Present study aimed to evaluate the quality of VCO extracted from four different moisture contents (MC) ranges of desiccated coconut (DC): 1-1.5% (T0), 1.5-2% (T1), 2-2.5% (T2) and 2.5-3% (w/w) (T3), considering the, MC range (1-3% (w/w) of DC used to extract VCO. Freshly cut coconut kernels were dried in an oven at 60°C for 1 hour and 25 minutes (T0), 1 hour and 30 minutes (T1), 1 hour and 45 minutes (T2) and 1 hour and 55 minutes (T3). MC of DC was tested. DC samples were fed into expeller machines (43°C temperature and 1.5 bar pressure) to expel VCO. Four VCOs were kept for 10 days to sediment and tested for MC, free fatty acid (FFA) by titrating with NaOH and peroxide value (PV) by titrating with Na₂S₂O₃. Experimental design used was complete randomized design (CRD) and data were analysed using Minitab 16 statistical software. The average MC of DC of T0, T1, T2 and T3 were 1.13±0.01%, 1.74±0.05%, 2.31±0.25% and 2.74±0.24% (w/w), respectively. The average MC of VCO of T0, T1, T2 and T3 were 0.06±0.00%, 0.06±0.01%, 0.05±0.02% and 0.05±0.02% (w/w), respectively. PV of VCOs was ranged from 0.11 to 0.14 (meq peroxide kg⁻¹ oil). The average FFA of VCO was ranged from 0.02-0.06 (mg NaOH g⁻¹ oil). There is a positive correlation between MC of DC and MC of VCO (R²=0.6141). But, there is no significant difference between MC, PV and FFA of four VCO samples. The MCs of VCO in this study were between 0.05% and 0.06% (w/w), which is within the value recommended by Asian and Pacific Coconut Community (APCC) (≤0.3% w/w). These findings ensure that the quality of VCO is not significantly change with MC of DC within the selected MC ranges.

Keywords: Peroxide value, Free fatty acid, Asian and Pacific coconut community