

Chemical properties of virgin coconut oil.

ABSTRACT

A study on the commercial virgin coconut oil (VCO) available in the Malaysian and Indonesian market was conducted. The paper reported the chemical characteristics and fatty acid composition of VCO. There was no significant difference in lauric acid content (46.64–48.03%) among VCO samples. The major triacylglycerols obtained for the oils were LaLaLa, LaLaM, CLaLa, LaMM and CCLa (La, lauric; C, capric; M, myristic). Iodine value ranged from 4.47 to 8.55, indicative of only few unsaturated bond presence. Saponification value ranged from 250.07 to 260.67 mg KOH/g oil. The low peroxide value (0.21–0.57 mequiv oxygen/kg) signified its high oxidative stability, while anisidine value ranged from 0.16 to 0.19. Free fatty acid content of 0.15–0.25 was fairly low, showing that VCO samples were of good quality. All chemical compositions were within the limit of Codex standard for edible coconut oil. Total phenolic contents of VCO samples (7.78–29.18 mg GAE/100 g oil) were significantly higher than refined, bleached and deodorized (RBD) coconut oil (6.14 mg GAE/100 g oil). These results suggest that VCO is as good as RBD coconut oil in chemical properties with the added benefit of being higher in phenolic content.

Keyword: Antioxidant; Fatty acids; Iodine value; Lauric oils; Peroxide value; Oxidative rancidity; Saponification value; Triacylglycerol.