

Assessment of Quality of Coconut Oil and Sesame Oil Available in Jaffna District, Sri Lanka

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Consumption of edible oils that are adulterated with poor quality oils is a major threat to human health. This study was aimed to determine the quality of coconut oil and sesame oil available for sale in Jaffna district emphasizing mainly adulteration. A total of 27 samples of branded and non-branded oils (coconut oil: branded-7, non-branded-14 and sesame oil: branded-4 and non-branded-2) were randomly collected from sales outlets in Jaffna district and analyzed for free fatty acid (FFA) content, iodine value (IV) and peroxide value (PV) using standard methods and fatty acid profile by gas chromatography. Parameters were compared with the standard values of Food Act No.26 of 1980 and Codex Standards. FFA content and PV of all samples agreed with the standards. IV of 52% of coconut oil samples and 50% of sesame oil samples agreed with the standards. Among coconut oil samples, 3 out of 7 (42.85%) branded and 5 out of 14 (35.71%) non-branded samples had significantly higher IV (up to 13.90 ± 0.01) than standard (7-10). Among the branded sesame oil samples, 1 out of 4 (25%) had slightly higher IV (121.36 ± 0.84) than standard (104-120), whereas 1 out of 2 (50%) non-branded sesame oil samples had significantly higher IV (131.63 ± 0.04) than standard. The samples that did not agree with the standard IV are suspected to be adulterated with other oils. Suspected coconut oil samples contained lower lauric acid content and higher palmitic acid and linoleic acid contents than standard. Suspected sesame oil samples contained caprylic, capric and lauric acids and higher palmitic acid and lower linoleic acid contents than standard. In conclusion, 52.3% of coconut oil and 33.3% of sesame oil samples were suspected to be adulterated with other oils. Further studies are needed to confirm the adulteration and the type of adulterants of these edible oils.

Keywords: Adulteration, coconut oil, fatty acid, iodine value, sesame oil

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