



**ASSESSMENT OF QUALITY OF COCONUT OIL
AND ITS ADULTERATION WITH PALM OIL**

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Abstract

Coconut oil is commonly used edible oil in Sri Lanka. It is rich in lower chain saturated fatty acids. It is directly used as cooking oil and also used in food manufacturing process. But in the Sri Lankan market it has been observed that the coconut oils are adulterated with other oils. Palm oil is mostly used in adulteration of coconut oil. Because, palm oil has same physical and chemical characteristic properties to the coconut oil and it is cheaper compared to coconut oil. So, to enhance the profit, palm oil is used as an adulterant in coconut oil industry. Therefore, the coconut oil has been chosen for present adulteration study.

In this research project we used both classical and instrumental methods to determine the adulteration percentage. In the classical method refractive index, free fatty acids, saponification value and iodine value were measured. In instrumental method, gas chromatographic (GC) method was used. In the gas chromatography method first the calibration series was prepared and using that calibration plot, the market samples were analyzed. Here twenty commercially available samples were collected from the distribution centers of Colombo area and these samples were analyzed using classical and instrumental methods.

Then we observed that thirteen samples are adulterated with palm oil in different percentages and one sample is 100% palm oil. Only other six samples were identified as pure coconut oils. That mean 70% of market samples are adulterated. According to the statistical analysis of results, we concluded that coconut oil mean adulteration from palm oil in the market is equal to zero is rejected with 95% confidence level. So, with 95% confidence interval, our coconut oil samples are adulterated.