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Modification of extraction methods of coconut oil to incorporate more phenolic substances

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The amount of phenolic compounds in cooking oils is an important factor when the quality of the oil is evaluated. The phenolic composition of a seed oils is the result of complex interactions between several factors, including degree of maturation, extraction method and conditions during extraction. In the present study, total phenol contents and *o*-diphenol contents of the phenolic extracts of coconut oil were determined as a function of the standing time of coconut oil near the boiling temperature. During this study, coconut milk was prepared by hand pressing coconut kernel with water and water was evaporated from this mixture by boiling to prepare traditional coconut oil. When the water layer evaporated completely, the coconut oil was allowed to stand under boiling conditions and samples were collected for total phenol and *o*-diphenol analysis after every five minute interval.

The total phenol contents of coconut oil increased from 34 ± 4 mg/kg to 708 ± 5 mg/kg while *o*-diphenol contents increased from 11 ± 1 mg/kg to 94 ± 1 mg/kg within 30 minutes of heating. The phenol contents in coconut oil decreased upon standing further at boiling temperature due to the caramelization of oil followed by deposition of phenolic substances at the bottom of the container. The results indicate that the phenolic compounds are properly incorporated into coconut oil at high temperatures. Due to the presence of triglycerides of mainly saturated medium chain fatty acids, coconut oil is extremely thermally stable. Due to this thermal stability, high temperature conditions for about 30 minutes can be easily used for the enrichment of coconut oil with phenolic substances without affecting the composition of coconut oil.

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