

Fatty acid profile of coconut milk in relation to different household extraction methods

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An experiment was conducted with the objective of determination of the effect of different household extraction methods on the fatty acid profile of coconut milk. Fatty acid profile of coconut milk extracted by different methods (hand squeezing, blending in a liquidizer followed by hand squeezing, grinding followed by hand squeezing) using cold water (water at room temperature) and hot water was analyzed by using fatty acid methyl esters in Gas Chromatography.

Fatty acid profile of extracted coconut milk

Classes of Fatty acids	Type of Fatty acids	Extraction methods					
		Hand squeezing Cold water	Hand squeezing Hot water	Blending Cold water	Blending Hot water	Grinding Cold water	Grinding Hot water
Short chain	Caproic	0.72	0.17	0.57	0.54	0.76	0.54
	Caprylic	9.91	6.62	8.08	8.77	10.40*	7.95
	Capric	6.82	5.26	6.01	6.22	6.83	5.74
Medium chain	Lauric	49.59*	46.12	46.40	49.19	45.73	48.92
Long chain	Myristic	20.05	21.11*	20.59	19.10	18.75	19.32
	Palmitic	8.51	8.96	8.56	9.96*	7.83	8.38
	Stearic	0.10	0.23	1.05*	0.50	0.90	0.45
	Oleic	4.27	7.91*	5.73	6.73	6.23	5.34
	Linoleic & Linolenic	3.06	3.56*	2.95	2.99	2.61	3.33

Values are percentages of fatty acids in 1st milk, Methods X treatment interactions were significant $P < 0.0001$,

*Means are significantly different (at $p = 0.05$) from other methods.

Results revealed that the fatty acid profile of coconut milk varies with different extraction methods. Highest amount of short chain fatty acids were obtained in 1st milk when coconut milk was extracted by grinding followed by hand squeezing using cold water. Significantly higher ($P < 0.0001$) amount of Lauric acid (major saturated fatty acid in coconut milk) was obtained from hand squeezing, using cold water, both in 1st milk and 2nd milk, whereas highest amount of polyunsaturates were given in 1st milk by the same method with hot water. Results revealed that grinding followed by hand squeezing using cold water is the best method of extraction as it gives highest amount of short chain fatty acids.