

Processing Methods for Increasing the Yield, Nutritional Value and Stability of Coconut Milk

Authors : Archana G. Lamdande, Shyam R. Garud, K. S. M. S. Raghavarao

Abstract : Coconut has two edible parts, that is, a white kernel (solid endosperm) and coconut water (liquid endosperm). The white kernel is generally used in fresh or dried form for culinary purposes. Coconut testa, is the brown skin, covering the coconut kernel. It is removed by paring of wet coconut and obtained as a by-product in coconut processing industries during the production of products such as desiccated coconut, coconut milk, whole coconut milk powder and virgin coconut oil. At present, it is used as animal feed component after drying and recovering the residual oil (by expelling). Experiments were carried out on expelling of coconut milk for shredded coconut with and without testa removal, in order to explore the possibility of increasing the milk yield and value addition in terms of increased polyphenol content. The color characteristics of coconut milk obtained from the grating without removal of testa were observed to be L* 82.79, a* 0.0125, b* 6.245, while that obtained from grating with removal of testa were L* 83.24, a* -0.7925, b* 3.1. A significant increase was observed in total phenol content of coconut milk obtained from the grating with testa (833.8 µl/ml) when compared to that from without testa (521.3 µl/ml). However, significant difference was not observed in protein content of coconut milk obtained from the grating with and without testa (4.9 and 5.0% w/w, respectively). Coconut milk obtained from grating without removal of testa showed higher milk yield (62% w/w) when compared to that obtained from grating with removal of testa (60% w/w). The fat content in coconut milk was observed to be 32% (w/w), and it is unstable due to such a high fat content. Therefore, several experiments were carried out for examining its stability by adjusting the fat content at different levels (32, 28, 24, and 20% w/w). It was found that the coconut milk was more stable with a fat content of 24 % (w/w). Homogenization and ultrasonication and their combinations were used for exploring the possibility of increasing the stability of coconut milk. The microscopic study was carried out for analyzing the size of fat globules and the degree of their uniform distribution.

Keywords : coconut milk, homogenization, stability, testa, ultrasonication

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