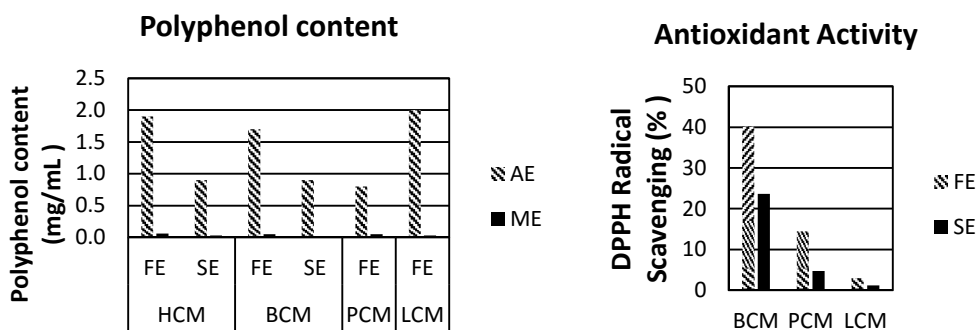


Determination of polyphenol content in coconut milk by modified Folin-Denis assay

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Polyphenols are micronutrients which has nutritional value owing to their antioxidant activity. Polyphenol content is usually determined by the standard Folin-Denis Assay. Water soluble compounds commonly present in biological samples, such as proteins, ascorbic acid, DNA and RNA may interfere with this assay. Therefore, it is difficult to determine whether the antioxidant capacity of such samples are owing to these interfering compounds or other polyphenols present in the aqueous extracts (AE) like coconut milk (CM). In order to overcome these drawbacks, a modified extraction method was employed to remove proteins from the AE of CM to determine the polyphenol content in first (FE) and second (SE) extracts of both domestic and commercial preparations of CM using Folin-Denis assay. The results were reported as Gallic acid equivalents (mg/mL). Proteins/peptides present in the AE of CM (1.00 mL) was removed by organic extraction with chloroform (1.00 mL), distilled water (4.00 mL) and methanol (4.00 mL). Samples were mixed at 30 Hz for 01 min followed by centrifugation at 6000 rpm for 05 min. The methanolic layer was used for the Folin-Denis assay. The methanolic extracts (ME) were confirmed free of proteins by Bradford assay. Results showed significantly low polyphenol content in the ME compared to the AE indicating interference in the assay from proteins/peptides present in the AE of CM. Corresponding antioxidant activity of the ME of both FE and SE of domestic CM preparations were significantly higher compared to the commercial counterparts regardless of the presence of high polyphenol content in the AE. Therefore, the modified Folin-Denis assay reported here determine the polyphenol content in AE of food preparations that may contribute to their antioxidant potential.



Values reported are for mean BCM (n = 9), PCM (n = 6) and LCM (n = 6) \pm S.D.

BCM – Blended CM

PCM – Powdered CM

LCM – Liquid CM

Keywords: Coconut milk, Polyphenols, Folin-Denis assay

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