DEVELOPMENT OF LOW GLYCEMIC INDEX FOOD: COCONUT FLOUR INCORPORATED PITTU MIX

By

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Abstract

Defatted Desiccated Coconut Kernel (DDCK) is the major by-product of Virgin Coconut Oil (VCO) processing with proven health benefits but is still underutilized. Incorporating DDCK into bakery products as a flour substitute is gaining popularity in functional food processing. However, still the potential of utilizing DDCK as a flour substitute to prepare '*Pittu*', a popular breakfast meal in Asian countries and its associated health benefits has not been studied. Therefore, this research aimed to develop a Pittu mix incorporating DDCK and Rice Flour (RF) as a low glycemic food product Pittu Mixes were made with 10% (T1), 20% (T2), and 40% (T3) of DDCK incorporated into rice flour. The sensory properties of each treatment and control Pittu (CP) were evaluated by 30 untrained panelists using a five-point hedonic scale (Appearance, odder, Taste, Texture, Overall). An in vivo test was carried out for T3 and CP using 40 human subjects to evaluate the Glycemic Index (GI) using white bread as the standard. The proximate composition of the selected pittu mix and the CP was conducted using standard methods. Based on the sensory evaluation T3 (40 %) DDCK was selected as the treatment most preferred by consumers. The GIs of T3 and CP were 84 % and 43 % respectively. Therefore, CP was classified under high GI food (GI>70) and T3 was classified under low GI food (GI<55). Results of the proximate composition analysis indicated that the incorporation of DDCK affected significantly ($P<0.05$) the crude fiber, crude fat, ash, moisture and carbohydrate content. The incorporation of DDCK has increased the fiber level of Pittu from 1.97±0.66% (CP) to 3.59±0.47 (T2) and fat increase from 3.16±0.46 (CP) to 5.54±0.5 (T3). In conclusion, modifications of the 40% DDCK incorporated pittu mix (T3) has a lower GI value and improved the nutritional profile while lowering the carbs and boosting moisture, fat, fiber and ash contents.

Keywords: Defatted desiccated coconut kernels, glycemic index, traditional Sri Lankan food pittu.

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