



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

By

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EU/IS/2017/BST/057

**Research Project Dissertation is Submitted in Partial Fulfilment of the
Requirements for the
Bachelor of Biosystems Technology Honours in Agricultural Technology and
Entrepreneurship**

Department of Biosystems Technology, Faculty of Technology

Eastern University, Sri Lanka

2024



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**Project Report
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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, odor, 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 $1.97 \pm 0.66\%$ (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.

Table of contents

DECLARATION.....	iii
DEDICATION	iv
ACKNOWLEDGEMENT	v
Abstract.....	vi
Table of contents	vii
LIST OF FIGURES.....	ix
LIST OF TABLES	x
Abbreviations and Symbols	xi
1. CHAPTER 01 - Introduction	1
1.1. Background of the study.....	1
1.2. Objectives	3
1.2.1. General objective.....	3
1.2.2. Specific objectives:.....	3
2. CHAPTER 02 - Literature Review	4
2.1. Coconut tree	4
2.2. Coconut-based food products.....	4
2.3. Virgin coconut oil.....	5
2.4. DDCK (Defatted desiccated coconut kernels)	6
2.5. Health benefits of DDCK	7
2.6. Glycemic index (GI).....	9
2.7. In vivo GI testing.....	10
2.8. Health benefits of low GI foods	10
2.9. Fiber intake and GI.....	10
2.10. Traditional pittu	11
3. CHAPTER 03 - Materials & Methodology	12
3.1. Experimental location.....	12
3.2. Used materials and equipment	12
3.2.1. Raw materials.....	12
3.2.2. Machinery and equipment	12
3.2.3. Chemicals.....	12
3.3. Sample preparation.....	13

3.4.	Sensory evaluation among three different Pittu mixes to find the best ratio for a pittu mix.....	13
3.5.	In vivo testing.....	15
3.5.1.	Calculation of digestible starch.....	16
3.5.2.	Glycemic index calculation	16
3.6.	Determination of the proximate composition of selected pittu treatment and control pittu sample.....	17
3.6.1.	Determination of moisture content.....	18
3.6.2.	Determination of fat content.....	18
3.6.3.	Determination of crude fiber content	19
3.6.4.	Determination of ash content.....	20
3.6.5.	Determination of crude protein content.....	21
3.7.	Data analysis	22
4.	CHAPTER 04 - Results and Discussion.....	23
4.1.	Sensory Evaluation for Identification of Best Pittu Mix Treatment Pittu making.....	23
4.2.	Proximate composition of selected pittu mixes and control pittu	25
4.3.	In vivo test and glycemic calculation	27
4.3.1.	Digestible starch.....	27
4.3.2.	Glycemic index	28
5.	CHAPTER 5 - Conclusion and Recommendation for Future Studies	30
	References.....	31
	Appendix.....	35