

THE EFFECTS OF VITAMIN B₁₂ DEFICIENCY ON THE ESTIMATION OF
IRON AND OTHER ELEMENTS IN FOODS

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**PHYSICOCHEMICAL PROPERTIES AND SENSORY ACCEPTANCE OF
BREAD MADE WITH COCONUT (*Cocos nucifera*) FLOUR**

By

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DECLARATION

I hereby declare this research project is based on my original work except for quotations and summaries which have been duly acknowledged.

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ABSTRACT

The purpose of this study was to determine the physico-chemical and sensory properties of bread made with bread flour and coconut (*Cocos nucifera*) flour which are bread with 100 % of bread flour , 5 %, 10 %, 15 % and 20 % of coconut flour. SAS program was used to determine the Analysis of Variance (ANOVA) and Duncan's Multiple Range Test (DMRT). The chemical analysis result showed that fibre, protein and fat content increased with the increasing of the percentage of coconut flour while moisture content was decreased. The physical analysis revealed that coconut flour increased the 'a', 'b' and texture value but decreased the 'L' and pH value. There were 50 panelists involved in the affective test. There were seven attributes for each samples were evaluated which are colour, odour, texture, porous, moistness, taste and overall acceptance. Bread which were made with 100 % bread flour, 5 % of coconut flour and 10 % of coconut flour were more acceptable by the panelist. This indicated that coconut flour have the potential of being substitute as much as 5-10 % with bread flour in bread-making.

FIZIKOKIMIA DAN SENSORI ROTI YANG DIHASILKAN DARIPADA TEPUNG KELAPA (*Cocos nucifera*) DAN TEPUNG ROTI

ABSTRAK

Kajian ini dilakukan untuk menentukan ciri-ciri fizikokimia dan penerimaan sensori roti yang dihasilkan daripada gabungan tepung roti dan tepung kelapa (*Cocos nucifera*) yang terdiri daripada roti daripada 100 % tepung roti, 5 %, 10 %, 15 % dan 20 % tepung kelapa. Program SAS digunakan untuk menentukan analisis varians (ANOVA) dan *Duncan's Multiple Range Test (DMRT)*. Hasil analisis kimia menunjukkan, dengan penambahan tepung kelapa, kandungan gentian, protein dan lemak meningkat dalam roti manakala kandungan kelembapan menurun. Bagi hasil analisis fizikal pula, penambahan tepung kelapa menyebabkan nilai 'a', 'b' dan tekstur meningkat manakala nilai 'L' dan pH menurun. Terdapat 50 panel yang terlibat dalam ujian afektif ke atas lima sampel roti. Atribut-atribut yang diuji bagi roti adalah warna, bau, tekstur, ruang udara, kelembapan, rasa dan penerimaan keseluruhan. Hasil keputusan ujian sensori, didapati bahawa roti yang disediakan daripada 100 % tepung roti, 5 % tepung kelapa dan 10 % tepung kelapa boleh diterima oleh panel. Ini menunjukkan tepung kelapa berpotensi untuk menggantikan sebanyak 5-10 % daripada tepung roti dalam penghasilan roti.