

PHYSICOCHEMICAL PROPERTIES OF BISCUIT MADE FROM CASSAVA
AND CORN COB FLOUR

By

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ENDORSEMENT

The project report entitled **Physicochemical properties of biscuit made from cassava and corn cob flour** by **Nurul Suhada Binti Amron**, Matric No. **Uk 17420** has been reviewed and corrections have been made according to the recommendations by examiners. This report is submitted to the Department of Food Science in partial fulfillment of the requirement of the degree of Food Science (Food Technology), Faculty of Agrotechnology and Food Science, Universiti Malaysia Terengganu.



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DECLARATION

I hereby declare that the work in this thesis is my own except for quotations and summaries which have been duly acknowledged.

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ABSTRACT

This study was conducted to determine the physicochemical properties of biscuit made from cassava flour and corn cob flour with five different formulations. The formulations were 100: 0, 90: 10, 80: 20, 70:30 and 60:40 proportion of cassava and corn cob flour, respectively. The physical analysis (color, hardness, breaking strength, spread ratio and percentage spread) were carried out for all formulations. Sensory evaluation was also performed for all formulations by evaluating attributes such as color, pore size, compactness, hardness, taste and overall acceptance. Chemical analysis (ash, moisture, fat, protein, fiber, carbohydrate and calorie) were carried out for control sample (sample A, 0% corn cob flour) and for the most accepted biscuit formulation (sample B, 10% corn cob flour) only. The increase of corn cob flour in biscuit formulation increased the biscuit texture (hardness and breaking strength) and percentage of spread ($p < 0.05$). Meanwhile, sensory evaluation indicated that biscuit incorporated with 10% of corn cob flour was selected as the most accepted formulation by consumer panelist as it obtained the highest acceptable score for all the sensory attributes and differed significantly with control (0% corn cob flour). The incorporation of 10% corn cob flour in biscuit formulation did not affect chemical properties of biscuit.

ABSTRAK

Kajian ini dijalankan untuk menentukan sifat-sifat fizikokimia biskut yang dibuat dari tepung ubi dan tepung tongkol jagung pada lima fomulasi yang berbeza. Formulasi tersebut mengandungi nisbah antara tepung ubi dan tepung tongkol jagung yang masing-masingnya ialah 100: 0, 90: 10, 80: 20, 70:30 and 60:40. Analisis fizikal (warna, kekerasan, *breaking strength*, *spread ratio* dan *percentage spread*) telah dijalankan bagi semua fomulasi. Penilaian deria dijalankan berdasarkan beberapa kriteria iaitu warna, saiz liang, kepadatan, kekerasan, rasa dan penerimaan keseluruhan. Analisis kimia (penentuan kandungan abu, kelembapan, lemak, protein, serat, karbohidrat dan kalori) dijalankan untuk sampel kawalan (sampel A, 0% tongkol jagung) dan formulasi yang paling diterima (sample B, 10% tongkol jagung) sahaja. Peningkatan tepung tongkol jagung dalam penghasilan biskut meningkatkan tektur (kekerasan dan *breaking strength*) dan *percentage spread* ($p < 0.05$). Manakala, penilaian deria menunjukkan bahawa biskut dengan penambahan 10% tepung tongkol jagung dipilih sebagai fomulasi yang paling diterima oleh panel pengguna kerana iannya memperoleh skor penerimaan paling tinggi untuk kesemua kriteria dan menunjukkan perbezaan bererti dengan sampel kawalan (0% tepung tongkol jagung). Untuk analisis kimia, Penambahan 10% tepung tongkol jagung tidak merubah komposisi kimia biskut.