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Development of galangal (Alpinia galanga) flavored cookies / Siti Balkish Shaari.

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Lihat Sebelah

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PUSAT PEMBELAJARAN DIGITAL SULTANAH NUR ZAHIRAH

DEVELOPMENT OF GALANGAL (*Alpinia galanga*) FLAVORED COOKIES

SITI BALKISH BINTI SHAARI

RESEARCH PROJECT submitted impartial fulfillment of the requirements for the
Degree of Bachelor of Food Science
(Food service and Nutrition)

FACULTY OF AGROTECHNOLOGY AND FOOD SCIENCE
UNIVERSITI MALAYSIA TERENGGANU
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DECLARATION

I hereby declare that this research project is based on my original work except for quotations and summaries which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any degree at UMT or other institutions.

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Date: 21st June 2007

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ABSTRACT

The purposes of this study were to develop galangal (*Alpinia galanga*) flavored cookies, determined its proximate analysis, physical analysis and sensory acceptance. Five formulations of cookies were developed and the differences between the cookies were the amount of galangal powder being added into the cookies. The percentage of galangal powder being used was 0.5%, 1.0%, 1.5% and 2.0%. This food item was subjected to physical and proximate analysis as well as comparative sensory evaluation. SAS program was used to determine the Analysis of Variance (ANOVA) and Duncan's Multiple Range Test (DMRT). For the physical analysis, the result revealed that the hardness of all cookies formulation were significantly different ($p<0.05$). The hardness of galangal (*Alpinia galanga*) flavored cookies was increased as the amount of galangal powder increased. Overall, the fracturability of the cookies was decreased with increasing amount of galangal powder. Furthermore, the lightness and yellowness of cookies were decreased whereas the redness of cookies was increased as the amount of galangal powder increased. However, there was no significant different ($p<0.05$) between all the formulations for the fracturability and color profile. In general, the percentage of moisture and ash content of cookies was decreased with the incorporation of higher percentage of galangal powder. The proximate analysis showed that fiber content in cookies were increased significantly ($p<0.05$) when the amount of galangal powder increased. On the other hand, the percentage of protein content in galangal (*Alpinia galanga*) flavored cookies was decrease significantly ($p<0.05$) when higher proportion of galangal powder being added. The results also revealed that incorporation of galangal powder had decreased the fat content in cookies respectively. Slightly decreased in carbohydrate content was observed by incorporation of galangal powder. However, there was no significant different ($p<0.05$) between all the formulations for carbohydrate and fat content. There were 60 panels involved in affective sensory test. The results had showed that there were no significant different ($p<0.05$) for all attributes between the five cookies' formulation. This indicated that panels can accept all formulations of galangal (*Alpinia galanga*) flavored cookies.

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PENGHASILAN BISKUT BERPERISA LENGKUAS (*Alpinia galanga*)

ABSTRAK

Kajian ini dijalankan bertujuan untuk menghasilkan produk biskut berperisa lengkuas (*Alpinia galanga*), melakukan analisis proksimat, analisis fizikal dan menentukan penerimaan pengguna ke atasnya. 5 formulasi telah dihasilkan di mana perbezaan antara biskut ini ialah kandungan serbuk lengkuas yang digunakan. Peratusan serbuk lengkuas yang telah digunakan ialah sebanyak 0.5%, 1.0%, 1.5% dan 2.0%. Sampel biskut ini kemudiannya dilakukan analisis fizikal, analisis proksimat dan juga ujian penilaian sensori. Program SAS telah digunakan untuk menentukan *Analysis of Variance* (ANOVA) dan *Duncan Multiple Range Test* (DMRT). Bagi analisis fizikal, keputusan menujukkan bahawa setiap formulasi biskut mempunyai perbezaan signifikan ($p<0.05$) dari segi kekerasan. Kekerasan biskut berperisa lengkuas (*Alpinia galanga*) bertambah apabila jumlah serbuk lengkuas yang digunakan bertambah. Secara keseluruhannnya, kebolehpatahan biskut berkurang dengan peningkatan jumlah serbuk lengkuas yang digunakan.Tahap kecerahan dan kekuningan biskut semakin berkurang manakala tahap kemerahan biskut semakin meningkat apabila kandungan serbuk lengkuas yang digunakan semakin meningkat. Walaubagimanapun, tidak terdapat perbezaan yang signifikan ($p<0.05$) di antara semua formulasi biskut bagi profil warna. Secara umumnya, jumlah peratusan lembapan dan abu semakin berkurang dengan peningkatan jumlah serbuk lengkuas yang digunakan. Analisis proksimat menunjukkan bahawa kandungan gentian di dalam biskut meningkat secara signifikan ($p<0.05$) apabila jumlah serbuk lengkuas yang digunakan bertambah. Sebaliknya, peratus kandungan protein di dalam biskut berperisa lengkuas (*Alpinia galanga*) berkurang apabila jumlah serbuk lengkuas yang digunakan bertambah dan menunjukkan perbezaan yang signifikan ($p<0.05$). Keputusan juga menujukkan penambahan serbuk lengkuas mengurangkan kandungan lemak di dalam biskut. Penunurunan yang sedikit pada kandungan karbohidrat dikesan dengan pertambahan serbuk lengkuas. Walaubagaimanapun, tidak terdapat perbezaan yang signifikan ($p<0.05$) di antara semua formulasi biskut bagi kandungan karbohidrat dan lemak. Seramai 60 orang panel terlibat dalam ujian penilaian sensori. Keputusan menunjukkan tidak terdapat perbezaan yang signifikan ($p<0.05$) di antara semua formulasi. Ini menunjukkan bahawa panel dapat menerima semua formulasi biskut berperisa lengkuas (*Alpinia galanga*).