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LP 40 FASM 3 2007

Development of leather from banana (Musa sapientum) using response surface methodology (RSM) / Noranida Balkis Maheran.

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Lihat Sebelah

DEVELOPMENT OF LEATHER FROM BANANA (*Musa sapientum*) USING RESPONSE SURFACE METHODOLOGY (RSM)

By

NORANIDA BALKIS BINTI MAHERAN

RESEARCH PROJECT submitted in partial fulfillment of requirements for the Degree of Bachelor of Food Science (Food Service and Nutrition)

FACULTY OF AGROTECHNOLOGY AND FOOD SCIENCE
UNIVERSITI MALAYSIA TERENGGANU
MENGABANG TELIPOT
2007

This project should be cited as:

Noranida Balkis, M. 2007. Development of leather from banana (*Musa sapientum)* using Response Surface Methodology (RSM). Undergraduate thesis, Bachelor of Food Science (Food Service and Nutrition). Faculty of Agrotechnology and Food Science, Universiti Malaysia Terengganu (UMT). 77 p.

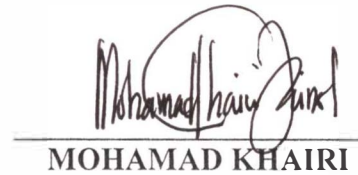
DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations which have been duly acknowledge. I also declare that it has not been previously or concurrently submitted for any degree at UMT or other institutions.

NORANIDA BALKIS BINTI MAHERAN

Date : 25th June 2007

Approved by



MOHAMAD KHAIRI MOHD ZAINOL

Date : 25th June 2007

ACKNOWLEDGEMENTS

SYUKUR Alhamdulillah to the Almighty Allah S. W. T. for giving me strength, patience and capability to complete this project and thesis write up.

First and foremost, I am pleased to extend my deepest appreciation and gratitude to my supervisor, En Mohamad Khairi Mohd Zainol for all his guidance, encouragement, suggestion, patience and invaluable knowledge in accomplishing this final year project. Also I would like to express my deepest thanks and appreciation to the Head of Food Science Department, Dr. Amiza Mat Amin, and all lectures from Food Science Department especially Dr. Amir Izzwan Zamri, Mr Aziz Yusof, Mr Wan Hariz Wan Zainal Shukri, Mr Fisal Ahmad, Mrs Zamzahaila Mohd Zin, Mrs Faridah Yahya, Mrs Khairil Shazmin Kamaruddin and Miss Norizah Mhd Sarbon

Sincere gratitude is also dedicated to all the laboratory and kitchen staffs of Food Science Department, especially Miss Nasrenim Suhaimi, Mrs Fadlina Yusof, Mrs Suzana Mat Saat, Miss Rose Haniza Mohamad, Mrs Dayang Normiah Mohamad and Mrs Faridah Mohd Isa.

Finally, I would like to express my appreciation and million thanks to my parents, Maheran Othman and Noraini Yusoff and my family. Also to Mohamad Haire Hassan, my course mates and friends for all theirs help, time suggestion, supports and encouragement while doing this research project. Thanks a lot.

ABSTRACT

Banana or *Musa sapientum* has been recognized as fruit that contained vitamin C, high in carbohydrate and also fiber. The objective of this study was to develop and optimize banana leather using *Response Surface Methodology* (RSM). Study the physical and chemical character of banana leather for each formulation and the acceptability of banana leather. The first stage of the study was includes the process to determine the best formulation that then used as the basic formulation and as control for the whole study. 12 formulations had been develop using RSM that indicate the percentage of banana puree and pectin. There were three-repeated formulations, which were 1, 7 and 8. Banana leather was analyzed for moisture content, carbohydrate, fiber, vitamin C, texture (hardness and stickiness) and colour (L*, a* and b*). Furthermore, 50 panels used to determine the degree of acceptance for colour, aroma, taste, chewiness and overall acceptance for banana leather in sensory evaluation session. Results from RSM method showed that there were significant effect ($p<0.05$) on carbohydrate, hardness and stickiness value for banana leather.

PENGHASILAN GEGULUNG PISANG MENGGUNAKAN *RESPONSE SURFACE METHODOLOGY* (RSM)

ABSTRAK

Pisang atau *Musa sapientum* telah dikenal pasti sebagai buah yang mengandungi vitamin C, tinggi kandungan karbohidrat dan juga serat. Kajian ini dijalankan adalah untuk menghasilkan dan mendapatkan formulasi optimum bagi penghasilan gulungan pisang menggunakan *Response Surface Methodology* (RSM). Selain itu, kajian ini mencangkupi penentuan sifat fizikal dan juga kimia gulungan pisang bagi setiap formulasi. Kajian ini juga bertujuan untuk membuat penentuan tahap penerimaan gulungan pisang yang dihasilkan. Kajian awal melibatkan penghasilan produk gulungan pisang yang terbaik yang akan digunakan sebagai asas dan juga kawalan di sepanjang kajian dijalankan. Seterusnya dengan menggunakan RSM, 12 formulasi yang baru telah dihasilkan dan melibatkan perubahan nilai peratusan kandungan puri pisang dan juga pektin. Terdapat tiga pengulangan formulasi iaitu formulasi 1, 7 dan 8. Produk gulungan pisang yang telah siap diuji kandungan lembapan, karbohidrat, serat, vitamin C, tekstur (kekerasan dan kemelekitan) dan warna (L*, a* dan b*). Selain itu seramai 50 orang panel telah digunakan untuk penentukan nilai purata bagi atribut warna, bau, rasa, kekenyalan dan penerimaan keseluruhan bagi gulungan pisang dalam sesi penilaian deria. Keputusan daripada kaedah RSM menunjukkan terdapat perbezaan yang signifikan ($p<0.05$) bagi nilai karbohidrat, kekerasan tekstur dan juga kemelekitan gulungan pisang.