DEVELOPMENT OF CRACKERS FROM JACKFRUIT RAGS

SITI ROSNI BINTI HUD

FACULTY OF AGRICULTURAL AND FOOD SCIENCES
UNIVERSITI PUTRA MALAYSIA BINTULU
2016

QH: 9245

1100090133

Pusat Pembelajaran Digital Sultanah Nur Zahirah (UMT)
Universiti Malaysia Terengganu.

PUSAT PEMBELAJARAN DIGITAL SULTANAH NUR ZAHIRAH
UMT

LP 48 FASM 2 2008

1100090133
Development of crackers from jackfruit rags / Suripah Muhammad.

PUSAT PEMBELAJARAN DIGITAL SULTANAH NUR ZAHIRAH
UNIVERSITI MALAYSIA TERENGGANU (UMT)
21030 KUALA TERENGGANU

1100090133

Lihat Sebelah

HAK MILIK
PUSAT PEMBELAJARAN DIGITAL SULTANAH NUR ZAHIRAH

Pusat Pembelajaran Digital Sultanah Nur Zahirah (UMT)
Universiti Malaysia Terengganu

DEVELOPMENT OF CRACKERS FROM JACKFRUIT RAGS

By

Suripah Binti Muhammad

Research Report submitted in partial fulfillment of
the requirements for the degree of
Bachelor of Food Science (Food Service and Nutrition)

Department of Food Science
FACULTY OF AGROTECHNOLOGY AND FOOD SCIENCE
UNIVERSITI MALAYSIA TERENGGANU
2008

FAKULTI AGROTEKNOLOGI DAN SAINS MAKANAN
UNIVERSITI MALAYSIA TERENGGANU

PENGAKUAN DAN PENGESAHAN LAPORAN PROJEK PENYELIDIKAN I DAN II

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

.....

.....

.....

.....

oleh....., No.Matrik .....
telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan .....
sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah Sarjana Muda .....
Fakulti Agroteknologi dan Sains Makanan, Universiti Malaysia Terengganu.

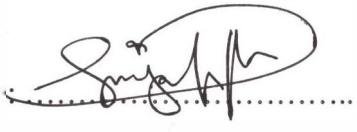
Disahkan oleh:

.....
Penyelia Utama
Nama: DR. AMIR IZZWAN ZAMRI
Ketua
Jabatan Sains Makanan
Cop Rasmi: Fakulti Agroteknologi dan Sains Makanan
Universiti Malaysia Terengganu
21030 Kuala Terengganu
Tarikh: 21/12/08

.....
Penyelia Kedua (jika ada)
Nama:
Cop Rasmi
Tarikh: .....

DECLARATION

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

Signature : 

Name : Suripah Bt Muhammad

Matric No. : UK11906

Date : 2 December 2008

ACKNOWLEDGEMENT

Assalamualaikum

In the name of Allah the Merciful and the Beneficent

Grateful praise to Allah, at last this academic project on the title of Development of Cracker from Jackfruit Rags. It is procedure and practice has completed.

This writing, has arranged as a part of condition required to complete for Bachelor of Food Science (Food Service and Nutrition). During completing this thesis, I also faced a few obstacles, however all this can be overcome with supported from every party.

First for all, I would like to greet a deep appreciation to my supervisor of this academic writing, Dr. Amir Izzwan for his contribution in term of time, ideas, guidance and instructions since beginning until end of this writing.

Sincere thanks to Rector, Rector's Assistants and staff with opportunity given to writer for studying in UMT. To all lecturers of Department of Food Science and staff of laboratory either *Makmal Perkhidmatan Makanan* or *Makmal Sains Makanan* thank you very much for your help and guidance in making this writing easily.

Sincere thanks to supplier of jackfruit at Tok Jembal, Sri Tanjung and Kampung Losong for giving information and selling their jackfruits to do this research easily and successful.

Despite those above special thanks to my parents, Hj Muhammad b. Abu Bakar, Hjh Mai Salamah bt Ahmad and my family. Not to forget my entire classmate and others friends thanks for supports and cooperation's which giving my inspiration and spirit to achieve the goal.

Finally, I would like to great *jazakumullahu khairan kathira* to those who are involved, direct or indirect during preparing this thesis, and may Allah Bless Us.

ABSTRACT

For this research, jackfruit (*Artocarpus heterophyllus)* rags are the main of raw material that is used in this experiment. It is located at the skin inside which is the yellow flesh is embedded in that form of capsules. Jackfruit rags also had been waste after the flesh yellow was taken. Therefore, the research about jackfruit rags had been done to obtain the flour to develop the cracker. Jackfruit rags were dried at the temperature of 60°C for 48 hours. Then, it is grounded and sieved using sieving (250µm) to make the jackfruit rags flour (JRF). Five formulations of jackfruit rags cracker were produced (0%, 10%, 20%, 30% and 40%) whereby the wheat flour (all purpose flour) as the control formulation (0%). Analysis was done on the formulations to determine the moisture, ash, fat, protein, fiber, and carbohydrate content. The hardness, fracturability and color of the cracker had been done to compare with the wheat flour cracker. Determination of the acceptance of the jackfruit rags cracker from untrained panel using sensory evaluation attributes such as appearance, color, fracturability, smell, flavor and overall acceptance. Based on the results, jackfruit rags cracker is low in moisture content (6.25%, 4.98%, 4.5% and 3.74%), protein content (8.7%, 7.98%, 7.82% and 7.27%) and carbohydrate content (65.1%, 65.13%, 62.82% and 62.18%). Even though, for fat content (16.83%, 17.86%, 19.27%, and 20.23%), fiber content (0.76%, 1.4%, 2.84% and 3.51%) and ash content (2.38%, 2.66%, 2.76% and 3.08%) increases as the level of JRF increase. Cracker containing 10% of JRF was least hard and more fracturable compared to control sample. The color is golden brown while for the control sample is pale in color. Anyway, cracker that contains 10% of JRF was accepted by untrained panel. Therefore, as the conclusion the cracker of jackfruit rags contains high of fiber content (41.1%) and has a potential to compete with others cracker in the market.

ABSTRAK

Penggunaan jerami nangka (*Artocarpus heterophyllus)* adalah bahan utama untuk kajian ini dijalankan. Jerami nangka boleh didapati di bahagian dalam kulit nangka yang memegang isi nangka. Ia merupakan bahan buangan selepas isi nangka diambil. Ekoran daripada itu, satu kajian mengenai jerami nangka dilakukan dengan menjadikannya sebagai tepung untuk dibuat kraker atau biskut. Jerami nangka yang telah diambil daripada buah nangka dikeringkan pada suhu 60°C selama 48 jam. Seterusnya dikisar dan ditapis pada penapis 250µm untuk dijadikan tepung jerami nangka (TJN). Kraker jerami nangka ini telah dibuat dengan 5 formulasi berbeza (0%, 10%, 20%, 30% dan 40%) yang mana tepung gandum sebagai formulasi kawalan (0%). Semua formulasi tadi di analisis untuk mengkaji kandungan kelembapan, abu, lemak, protin, serat, karbohidrat. Kekerasan, kerapuhan dan warna kraker jerami nagka juga di uji untuk dibandingkan dengan kraker tepung gandum biasa. Penentuan penerimaannya dikalangan panel tidak terlatih juga dibuat melalui penilaian sensori mengikut ciri-ciri yang ditetapkan seperti apearan, warna, kerapuhan, bau, rasa dan penerimaan keseluruhan. Hasil daripada analisis tersebut, didapati kraker jerami nangka mempunyai kandungan kelembapan (6.25%, 4.98%, 4.5% dan 3.74%), protin (8.7%, 7.98%, 7.82% dan 7.27%) dan karbohidrat (65.1%, 65.13%, 62.82% dan 62.18%) semakin rendah apabila semakin tinggi kandungan tepung jerami nangka ditambah ke dalam adunan. Namun begitu, kandungan lemak (16.83%, 17.86%, 19.27%, dan 20.23%), serat (0.76%, 1.4%, 2.84% and 3.51%) dan abu (2.38%, 2.66%, 2.76% dan 3.08%) semakin meningkat dengan meningkatnya formulasi TJN yang digunakan. Kraker yang ditambah 10% TJN menunjukkan ia tidak keras dan mudah patah berbanding yang kawalan. Warna kraker jerami pula adalah berwarna kuning keemasan berbanding warna pucat pada sampel kawalan. Dari segi penerimaan panel pula, kraker yang mengandungi 10% TJN adalah paling diterima keseluruhannya. Dengan ini dapat disimpulkan bahawa kraker jerami nangka mempunyai potensi untuk bersaing dengan kraker-kraker lain di pasaran.