

DETERMINATION OF GLYCEMIC RESPONSE OF PUMPKIN
MUSKET IN HEALTHY ADULTS

MR. FARHANA MUSTAFA

SCHOOL OF AGRICULTURE AND FOOD SCIENCES
UNIVERSITI MALAYSIA TERENGGANU

2008

DETERMINATION OF GLYCEMIC RESPONSE OF PUMPKIN NUGGET IN HEALTHY ADULTS

By
Nur Farhana binti Mustafa

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
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PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

*Determination of glycemic response of pumpkin nugget in
healthy adults*

oleh *Nur Farhana Mustafa*, No.Matrik *UK11346*

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Sains Makanan (Perkhidmatan Makanan & Pemakanan)

Fakulti Agroteknologi dan Sains Makanan, Universiti Malaysia Terengganu.

Disahkan oleh:

Amza

Penyelia Utama

Nama:

PROF. MADYA DR. AMIZA MAT AMIN
Timbalan Dekan (Hal Ehwal Pelajar & Alumni)
Fakulti Agroteknologi dan Sains Makanan
Universiti Malaysia Terengganu
21030 Kuala Terengganu.

Cop Rasmi:

Tarikh: *21/12/08*

Penyelia Kedua (jika ada)

Nama:

Cop Rasmi

Tarikh:



FAKULTI AGROTEKNOLOGI DAN SAINS MAKANAN
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Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: DETERMINATION OF GLYCEMIC RESPONSE OF PUMPKIN NUGGET IN HEALTHY ADULTS oleh Nur Farhana binti Mustafa, No. Matrik: UK11346 telah diperiksa dan semua pembedaan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Makanan sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah Sarjana Muda Sains Makanan (Perkhidmatan Makanan dan Pemakanan), Fakulti Agroteknologi dan Sains Makanan, Universiti Malaysia Terengganu.

Disahkan oleh:

Penyelia Utama

Nama:


Cop Rasmi:

PROF. MADYA DR. AMIZA MAT AMIN
Timbalan Dekan (Hal Ehwal Pelajar & Alumni)
Fakulti Agroteknologi dan Sains Makanan
Universiti Malaysia Terengganu
21030 Kuala Terengganu.

Tarikh: 21/12/08

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 : Nur Farhana binti Mustafa

Matric No : UK11346

Date : 13/12/2008

ACKNOWLEDGEMENT

Firstly, I am very grateful to Allah S.W.T for giving me the strength to complete this project. I would like to express my gratitude to my supervisor, Assoc. Prof. Dr Amiza Mat Amin lecturer for her guide, advices and perpetual enthusiasm in this project. Without her guide, lesson and support, this study could not be done successfully. I'd like to thank my final year project coordinator, En. Faisal bin Ahmad for his knowledge and direction. Besides that a very big thanks for all subjects participating in this study, all staff of Food Science Department and all my friends that have contributed in this project by supporting, encouraging and giving me the morale support to give my best effort in carrying out this study. Last but not least, special thank is due to my family for all their love and support in helping me to accomplish my final year project. Their hardwork, feedback, friendship, and smiling faces were a source of creativity and endurance

ABSTRACT

This study was carried out to determine the blood glucose responses of pumpkin nugget in healthy adult. Fourteen healthy adults' subjects had participated in this study. Two types of pumpkin nugget namely pumpkin nugget (PN) and pumpkin nugget incorporated with 30% minced chicken (PC) were tested. The subjects were required to go through the study protocol on three separate occasions in duplicate, for glucose reference, PN and PC after an overnight fasting. Capillary blood samples were taken immediately before (0 min) and at 15, 30, 45, 60, 90, and 120 min after consumption of the test food. It was found that the blood glucose response (BGR) of PN reached the peak value was 0.9 mmol/L at time 45 minutes mean while the BGR of PC was 1.1 mmol/L at time 30 minutes. The BGR of PN for male was 1.2 mmol/L at time 30 minutes and for female was 0.9 mmol/L at time 45. Hence, it was found that BGR of PC reached the peak value for male was 1.0 mmol/L at time 45 minutes meanwhile female was 1.2 mmol/L at time 30 minutes. The iAUC of PN (85.99 ± 11.69^a) was significantly lower than that of PC (106.99 ± 8.79^b). The study found that there was no significant difference ($p > 0.05$) in the BGR of male subjects and female for blood glucose response for the same test meal at different time intervals, blood glucose response for different test meal at the same time intervals, comparison of blood glucose response between gender for PN and PC. The GI of PN (43.87 ± 5.50) was not significantly different from that of PC (44.66 ± 5.99). This study shows that replacing 30% pumpkin puree with minced chicken lowered the iAUC of pumpkin nugget but did not change its glycemic index.

ABSTRAK

Kajian ini dijalankan untuk menentukan tindakbalas glukosa darah nuget labu pada orang dewasa yang sihat dan indeks glisemik (GI). Empat belas orang sukarela yang sihat (7 lelaki, 7 perempuan, BMI = 21.89 ± 1.83 kg/m², age = 24.0 ± 1.88) telah terlibat dalam kajian ini. Terdapat dua jenis nuget labu iaitu nuget labu (PN) dan nuget labu dengan campuran 30 % ayam (PC). Subjek dikehendaki memenuhi syarat terhadap tiga jenis ujian (dua duplikasi untuk PN dan PC serta ujian bagi makanan standard) selepas puasa semalam. Sample darah kapilari diambil serta-merta sebelum (0 min) dan 15, 30, 45, 60, 90, dan 120 min selepas pengambilan makanan ujian. Daripada kajian, didapati tindakbalas glukosa darah (BGR) nuget labu telah mencapai nilai tertinggi iaitu 0.9 mmol/L pada masa 45 minit, manakala BGR bagi PC adalah 1.1 mmol/L pada masa 30 minit. Tindakbalas glukosa darah bagi PN telah mencapai nilai tertinggi untuk lelaki ialah 1.2 mmol/L pada masa 30 minit dan bagi perempuan ialah 0.9 mmol/L pada masa 45 minit. Seterusnya bagi PC, telah mencapai nilai tertinggi untuk lelaki ialah 1.0 mmol/L pada masa 45 minit dan bagi perempuan ialah 1.2 mmol/L pada masa 30 minit. Nilai iAUC bagi PN (85.99 ± 11.69^a) secara signifikannya lebih rendah daripada PC (106.99 ± 8.79^b). Indeks glisemik pula ditentukan mengikut rumus yang telah dipecahkan. Nilai GI bagi PN (43.87 ± 5.50) tidak mempunyai perbezaan secara signifikan daripada PC (44.66 ± 5.99). Kajian ini menunjukkan penggantian 30 % labu dengan ayam kisar merendahkan nilai iAUC nuget labu tetapi tidak mengubah indeks glisemiknya.