

DETERMINATION OF GLYCEMIC RESPONSE OF PUMPKIN
SWEET IN HEALTHY ADULTS

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Determination of glycemic response of pumpkin nugget in healthy adults / Nur Farhana Mustafa.

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**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
UNIVERSITI MALAYSIA TERENGGANU**

**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 uk 11346

telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Makanan

sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah Sarjana Muda Sains Makanan (Perkhidmatan Makanan & Pemakanan),

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UNIVERSITI MALAYSIA TERENGGANU**

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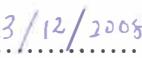
DECLARATION

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 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, $BMI = 21.89 \pm 1.83 \text{ kg/m}^2$, 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 dipiawai. 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.