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**THE EFFECT OF INCORPORATING TEXTURED VEGETABLE PROTEIN ON
THE CHARACTERISTIC OF PUMPKIN NUGGET**

By

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(Food Service and Nutrition)**

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DECLARATION

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



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Date: 10th JUNE 2007

Approved by

(ASSOCIATE PROF DR AMIZA MAT AMIN)

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ABSTRACT

The purpose of this study was to determine the effect of incorporating Textured Vegetable Protein (TVP) on the characteristics of pumpkin nugget and to evaluate the sensory acceptance of pumpkin nugget incorporated with TVP. Ten formulations of nuggets were prepared with different percentages of TVP and different types of mashed pumpkin used i.e. pumpkin with rind and pumpkin without rind. The study showed that incorporation of TVP had increased crude protein and crude fiber content in nuggets, and had caused the crude fat and moisture content of nuggets to decrease. The results also revealed that the incorporation of TVP in nuggets formulation increased the firmness and linear expansion of nuggets while decreased the cooking loss and oil uptake of the nuggets. The lightness and the yellowness of the nuggets increased with the incorporation of TVP but the redness was decreased with the incorporation of TVP. Nuggets prepared with 20% TVP and 65.9% pumpkin with rind was the most acceptable by the panelists and showed the significant difference ($p < 0.05$) with the acceptance of the nuggets which made from 100% pumpkin either pumpkin with rind or pumpkin without rind. This results showed that incorporation of TVP in pumpkin nuggets had improved its crude protein and crude fiber content, firmness, expansion and acceptability as well as decreased its cooking loss and oil uptake.

KESAN PENAMBAHAN TEXTURED VEGETABLE PROTEIN KE ATAS CIRI-CIRI FIZIKOKIMIA NUGET LABU.

ABSTRAK

Objektif kajian ini dilakukan adalah untuk menentukan kesan penambahan Textured Vegetable Protein (TVP) ke atas ciri-ciri fizikokimia nugget labu dan untuk menilai penerimaan sensori nugget labu yang ditambah dengan TVP. Sepuluh formulasi disediakan dengan peratus TVP yang berbeza dan jenis labu yang berbeza iaitu labu dengan kulit dan labu tanpa kulit. Hasil kajian menunjukkan kandungan protein kasar dan gentian kasar meningkat dan menyebabkan kandungan lemak kasar dan kelembapan menurun. Hasil kajian juga menunjukkan penambahan TVP dalam formulasi nugget meningkatkan ketegaran dan pengembangan nugget di samping mengurangkan kehilangan kelembapan akibat menggoreng dan penyerapan minyak. Kecerahan dan kekuningan nugget meningkat dengan penambahan TVP tetapi kemerahan nugget menurun. Nugget yang disediakan daripada 20% TVP dan 80% labu dengan kulit paling di terima oleh panel dan menunjukkan perbezaan signifikan berbanding tahap penerimaan nugget yang disediakan daripada 100% labu dengan kulit atau tanpa kulit. Hasil kajian ini menunjukkan penambahan TVP dalam nugget labu telah meningkatkan kandungan protein kasar dan gentian kasar, ketegaran, pengembangan dan penerimaan di samping mengurangkan kehilangan kelembapan akibat menggoreng dan penyerapan minyak.