

DEVELOPMENT OF HIGH-YIELD RADIATION-SENSITIVE  
POLYMER FILMS FOR X-RAY DETECTION

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Development of tofu made by mung bean and red kidney bean /  
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**HAK MILIK**  
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DEVELOPMENT OF TOFU MADE BY MUNG BEAN  
AND RED KIDNEY BEAN

WONG SHEAU YEE

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

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## DECLARATION

I hereby declare that this research project is based on my original work except the quotations and summaries, which have been duly acknowledged.

15th June 2006



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Approved by.



DR. AMIR IZZWAN ZAMRI

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## ABSTRACT

Tofu is one of the most important and popular food products. In this experiment, a new type of tofu was produced by using two different type of legumes, namely mung bean (*Phaseolus aureus*) and red kidney beans (*Phaseolus vulgaris*). Three formulated tofus which were different bean to water ratio 1:2, 1:3 and 1:4 were produced by using mung bean and red kidney bean respectively. In addition, agar was added into the tofu processing to assist the curd formation. The tofus made by mung bean and red kidney bean have higher carbohydrate content (12.16- 22.04) % but low in protein (3.33-6.69) % and texture scores as compared to tofu from soybean (control). For physical analysis, significant difference ( $p < 0.05$ ) was shown between tofu from mung bean and red kidney bean with soybean (control) in cutting strength and work of shear. These showed that different types of legumes have different gelation properties. Results from this study also indicated that bean to water ratio (1:3) will enable the gelation achieve the optimum strength. For sensory evaluation, the colour of tofu with green and lightly red colour is quite unacceptable to the panelists as compared to white colour. Mung bean with formulation bean to water ratio, 1:2 and red kidney bean with formulation bean to water ratio, 1:4 is more preferable than soybean (control). The overall sensory mean scores for tofu from red kidney bean is higher than tofu from mung bean; indicating red kidney bean tofu is more preferable.

## PERKEMBANGAN TAUHU DARIPADA KACANG HIJAU DAN KACANG MERAH

### ABSTRAK

Tauhu merupakan produk makanan yang paling popular dan penting. Dalam kajian ini, satu jenis tauhu yang baru dihasilkan dengan menggunakan dua jenis kacang yang berlainan, dikenali kacang hijau (*Phaseolus aureus*) and kacang merah (*Phaseolus vulgaris*). Tiga formulasi tauhu yang berlainan dari segi nisbah kacang kepada air iaitu 1:2, 1:3 dan 1:4 dihasilkan dengan menggunakan kacang hijau dan kacang merah masing-masing. Tambahan pula, agar ditambahkan dalam pemprosesan tauhu sebagai bantuan dalam pembentukan gel. Tauhu yang dihasilkan daripada kacang hijau dan kacang merah mempunyai kandungan karbohidrat yang tinggi iaitu (12.16- 22.04) % tetapi rendah dalam kandungan protein iaitu (3.33-6.69) % dan skor tekstur berbanding dengan kacang soya (kawalan). Dalam analisis fizikal, terdapat perbezaan signifikan ( $p < 0.05$ ) antara tauhu daripada kacang hijau dan kacang merah dengan kacang soya (kawalan) dalam ciri kekuatan kepotongan dan keregangan. Ini menunjukkan bahawa jenis kacang yang berlainan mempunyai keupayaan membentuk gel yang berlainan. Hasil kajian ini juga menunjukkan nisbah kacang kepada air (1:3) membolehkan keupayaan pembentukan gel mencapai kekuatan optimum. Untuk penilaian sensori, warna tauhu yang hijau dan merah muda masih tidak dapat diterima oleh pengguna berbanding dengan warna putih. Tauhu daripada kacang hijau dan kacang merah yang berformulasi nisbah kacang kepada air 1:2 dan 1:4 menunjukkan formulasi yang paling digemari berbanding dengan kacang soya. Secara keseluruhannya, nilai purata sensori untuk tauhu daripada kacang merah adalah lebih tinggi daripada tauhu daripada kacang hijau. Ini menunjukkan tauhu daripada kacang merah lebih digemari.