

PHYSICO-CHEMICAL, ACCEPTABILITY AND  
MICROBIOLOGICAL STUDY OF BUNNY  
INCORPORATED WITH CHEESE  
CONSAJGE

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**PHYSICHOCEMICAL, ACCEPTABILITY AND MICROBIOLOGICAL STUDY OF  
BUDU INCORPORATED WITH SWEET SOYA SAUCE**

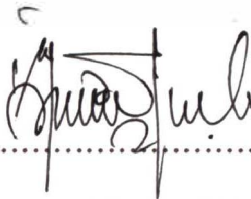
**By  
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**Research Report submitted in partial fulfillment  
of the requirement for the degree of  
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**DEPARTMENT OF FOOD SCIENCE  
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## ENDORSEMENT

The project report entitled **physicochemical properties, acceptability and microbiological study of budu incorporated with sweet soy sauce** by **Mohd Firdaus Abdullah** Matric No **UK17847** has been reviewed and corrections have been made according to the recommendations by examiners. This report is submitted to the Department of Food Science in partial fulfillment of the requirement of the degree of Food Science (Food Technology), Faculty of Agrotechnology and Food Science, University Malaysia of 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 conducted to determine the physicochemical properties, acceptability and microbiological study of budu incorporated with sweet soya sauce. Five formulations with the ratio of budu to sweet soya sauce in the range of 100:0; 95:5; 90:10; 85:15; and 80:20 were prepared to be analyzed for their physical properties (color and viscosity), chemical composition (pH, salt content, °Brix, moisture, protein, fat, ash, and carbohydrate content), sensory evaluation and the microbiological study. The physicochemical characteristics of samples were almost similar to the most data found in the literature. The viscosity of sample showed that there a significant difference ( $P < 0.05$ ) among sample, between 51.81 mPa-s and 53.98 mPa-s. Sample was slightly acidic, with pH between 4.54 and 4.63. Meanwhile for °Brix, the sample showed the significant difference ( $P < 0.05$ ) among all the samples, between 31.6 and 36.0 °Brix. Result showed that samples contained high amount of salt and protein which were between 15.86% - 17.36% and 10.85% - 12.70%, respectively. The data also indicated that samples contained low amount of fat which was less than 1%. The results also showed that ash and moisture content in samples were high with 16.46% - 17.55% of ash and 65.42% - 66.84% of moisture. For sensory evaluation, results showed that incorporation of budu with sweet soya sauce give no significant differences ( $P > 0.05$ ) between all samples. While for microbiological study, no microbial count (not detected) were records for *bacillus cereus*, *staphylococcus aureus* and *E.coli* except for aerobic plate count, there are microbial count were records. Even the pathogenic bacteria were detected in this study but the bacteria levels were below the set guideline limits ( $< 10^7$ ). The results of the study indicated that sweet soya sauce has no potential to be used to reduce the saltiness since it has potential in an increase of microbial count.

## ABSTRAK

Kajian ini dijalankan untuk menentukan sifat-sifat fizikokimia, penerimaan dan mikrobiologi. Lima formulasi disediakan dengan nisbah budu dengan kicap soya manis dalam julat 100:0; 95:5; 90:10; 85:15; dan 80:20 untuk dianalisis bagi sifat-sifat fizikal (warna dan kelikatan), kandungan kimia (pH, kandungan garam, °Brix, kandungan air, protin, lemak, abu dan karbohidrat), penilaian deria dan kajian mikrobiologikal. Hasi kajian mendapati ciri-ciri fizik dan kimia sampel adalah hampir sama kepada kebanyakan data hasil kajian-kajian terdahulu. Kelikatan sampel telah menunjukkan terdapat perbezaan bererti ( $P < 0.05$ ) antara sampel iaitu di antara 51.81 mPa-s dan 53.98 mPa-s. Sampel adalah sedikit berasid dengan pH antara 4.54 dan 4.63. Manakala untuk °Brix, kajian juga telah menunjukkan terdapat perbezaan bererti ( $P < 0.05$ ) antara semua sample dalam julat 31.6 dan 36.0 °Brix. Keputusan kajian juga menunjukkan bahawa sampel mengandungi garam dan protin yang tinggi iaitu masing-masing di antara 15.86% - 17.36% dan 10.85% - 12.70%. Namun begitu, kandungan lemak adalah rendah dalam sampel iaitu kurang daripada 1%. Keputusan kajian juga menunjukkan kandungan debu dan air dalam sampel adalah tinggi dengan 46% - 17.55% debu dan 65.42% - 66.84% air. Untuk penilaian deria, keputusan percampuran antara budu dan kicap soya manis menunjukkan perbezaan tidak bererti ( $P > 0.05$ ) di antara semua sampel. Manakala untuk kajian mikrobiologikal, tiada bilangan mikroorganisma telah direkodkan bagi *bacillus cereus*, *staphylococcus aureus* dan *E.coli* kecuali untuk kiraan plat aerobic terdapat mikroorganisma telah direkodkan. Walaupun bakteria patogenik telah dikesan dalam kajian ini tetapi tahap bacteria masih lagi di bawah tahap yang telah digaris ( $< 10^7$ ). Rumusan keputusan kajian ini menunjukkan kicap soya manis tidak ada potensi untuk digunakan bagi mengurangkan kemasinan kerana berpotensi dalam peningkatan jumlah mikrob.