

DEVELOPMENT OF BUDI POWDER USING DIFFERENT
METHODS OF DRYING

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UNIVERSITI MALAYSIA TERENGGANU
2008



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DEVELOPMENT OF BUDU POWDER USING DIFFERENT METHODS OF DRYING

By
Norhazwani binti Abd. Razak

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
UNIVERSITY 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:

DEVELOPMENT OF BUDU POWDER USING DIFFERENT METHODS OF
DRYING.

oleh NORHAZWANI BINTI ABD. RAZAK, No.Matrik UK11452

telah diperiksa dan semua pembedahan yang disarankan telah dilakukan. Laporan ini
dikemukakan kepada Jabatan SAINS MAKANAN

sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah Sarjana Muda
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UNIVERSITI MALAYSIA TERENGGANU**

**PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II**

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: 'Development of *Budu* Powder Using Different Drying Methods' oleh Norhazwani Binti Abd. Razak, No.Matrik UK11452 telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Makanan sebagai memenuhi sebahagian daripada keperluan memperoleh Ijazah Sarjana Muda Sains Makanan (Perkhidmatan Makanan dan Pemakanan). Fakulti Agroteknologi dan Sains Makanan, Universiti Malaysia Terengganu.

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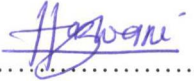
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DECLARATION

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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ACKNOWLEDGEMENT

Thanks to the Almighty Allah S.W.T for giving me patient, strenghtness and capability to complete and thesis write up.

First and foremost, I would like to express my particular gratitude to my supervisor, En. Fisal Hj.Ahmad for giving me valuable advice, guidance, suggestion, available knowledge and comment in helping to accomplish my final year project.

Secondly, I would like to thank to all the lecturers from Department of Food Science for their support in completing my project. Although they busy with their work, but their can spend a time for students which need their help. Besides, I need to give my special gratitude and appreciation to all staff from Department of Food Science and lab assistants for their continuous help and guide me how to use certain instrument in the lab.

I also want to thank to my parent for their encouragement and support that enable me finishing my project. Realization of this thesis would not have been possible without the constant assistance of my colleagues and personal friends. They gave all their available time as if it was their own work. I am indebted to all of them. Thanks a lot to all of you.

ABSTRACT

This study was conducted to develop *Budu* powder which produced by different methods of drying. The objective of this study was to determine the best drying method that can be used to produce *Budu* powder. There are three drying method that was used which are oven-drying (60°C), vacuum-oven drying (30°C) and spray-drying (Inlet temperature; 170°C, outlet temperature; 107.5°C). These drying methods were varied in term of temperature and drying condition. Physical analysis that are tested were determination of viscosity, color profile (L, a*, b*), solubility and sedimentation. From the data analysis, it revealed significant different ($p < 0.05$) on color profile, solubility and sedimentation among each *Budu* powder. Based on the chemical analysis data, there are significant different ($p < 0.05$) among *Budu* powder for moisture, protein, ash, carbohydrate, pH and salt content. Besides, Amino acid profile revealed the different result from each *Budu* powder. *Budu* powder from vacuum-oven drying had the highest amount of amino acid profile and the lowest amount in *Budu* powder from spray-drying. Based on the result from physico-chemical properties, the best drying method in producing *Budu* powder was vacuum-oven drying. According to sensory evaluation of *Budu* in liquid form, there are no significant different for overall acceptance among *Budu* powder and control. It indicates that, *Budu* powder from different drying methods was accepted by consumer when it converted into liquid. However, overall acceptance for *Budu* in powder form showed significant different among different drying method. The result revealed the highest mean score for *Budu* powder produced by vacuum-oven drying which is 5.33 ± 0.71 .

ABSTRAK

Kajian ini dijalankan untuk menghasilkan Budu Serbuk dengan menggunakan kaedah pengeringan yang berbeza. Objektif kajian ini ialah untuk menentukan kaedah pengeringan yang terbaik bagi menghasilkan Budu Serbuk. Tiga jenis pengeringan telah digunakan iaitu pengeringan oven (60°C), pengeringan vakum(30°C) dan pengeringan semburan (Suhu dalaman; 170°C, suhu luaran; 107.5°C). Ketiga jenis pengeringan ini menggunakan suhu yang berbeza. Analisis fizikal yang dijalankan ialah penentuan kelikatan, profil warna (L , a^* , b^*), keterlarutan dan pemendakan. Analisis data menunjukkan terdapat perbezaan yang beerti ($p < 0.05$) antara Budu Serbuk yang dihasilkan. Berdasarkan data dari analisis kimia pula, terdapat perbezaan yang bererti ($p < 0.05$) terhadap kandungan lembapan, protein, abu, karbohidrat, dan garam antara Budu Serbuk yang dihasilkan. Selain itu, profil asid amino turut menunjukkan kandungan yang berbeza. Profil asid amino adalah tinggi dalam Budu Serbuk dari pengeringan vakum dan Budu Serbuk dari pengeringan sembur menunjukkan nilai yang terendah. Ciri-ciri fiziko-kimia menunjukkan bahawa, pengeringan vakum adalah kaedah yang terbaik untuk menghasilkan Budu Serbuk. Berdasarkan penilaian deria terhadap Budu dalam bentuk cecair, tiada perbezaan bererti terhadap penerimaan keseluruhan antara Budu serbuk dan sampel rujukan. Ini menunjukkan bahawa, setiap Budu serbuk yang dihasilkan boleh diterima oleh pengguna apabila ia ditukarkan kepada bentuk cecair. Walaubagaimanapun, terdapat perbezaan yang bererti bagi penerimaan keseluruhan terhadap Budu serbuk. Data menunjukkan Budu serbuk yang dihasilkan melalui pengeringan vakum mempunyai skor min yang tertinggi iaitu 5.33 ± 0.71 .