

SENSORY AND CHEMICAL CHARACTERISTICS OF ANCHOVY SAUCE
PREPARED IN KELANTAN AND TERENGGANU

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PHYSICOCHEMICAL CHARACTERISTICS OF ANCHOVY SAUCE (BUDU)
PRODUCED IN KELANTAN AND TERENGGANU

By
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FAKULTI AGROTEKNOLOGI DAN SAINS MAKANAN
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PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

Physicochemical Characteristics of Anchovy Sauce (Bubbi)
Produced in Kesantan & Terengganu

oleh *Noor Subaida Che. Ati*, No.Matrik *UK 11593*

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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 and compare the physicochemical characteristics of anchovy sauce (budu) produced in Kelantan and Terengganu, since there were only a few studies on budu produced in Malaysia. Six samples of budu which is three samples from Kelantan and three samples from Terengganu respectively were collected to be analyzed. The physical properties, chemical compositions, and the amino acids profile of budu were investigated in this study. For physical characteristics, the color and viscosity analyses have been done where as for the chemical compositions analyses, it was included the analyses of pH, salt content, and proximate (moisture, protein, fat, ash, and carbohydrate content). Lastly, the amino acids profile analyses was also conducted to investigate what are the amino acids that available in anchovy sauce. By using HPLC, we have successfully determined seventeen amino acids that available in anchovy sauce. The physicochemical characteristics of budu samples were almost similar to most of the data found in the literature. Budu samples were slightly acidic, with pH between 5.02 and 5.92. The viscosity of the sample showed the significant different among all the samples, between 46.15 mPa-s and 112.52 mPa-s. Results showed that budu contained high amount of salt and protein, average between 38.37% - 51.23%, and 9.69% - 15.02 %, respectively. The data also indicated that budu contained low amount of fat and carbohydrate, where fat content was less than 1%, and carbohydrate was between 0.07% and 6.51%. The data also showed that ash and moisture content in budu were not significantly different. It contained about 15.75% - 18.81% of ash, and 64.27% - 69.46% of moisture. For the amino acids profile, glutamic acid showed the highest concentration in all the samples in both states. The content of essential amino acids (lysine, leucine, isoleucine, threonine, and valine) were found to be dominant in budu.

ABSTRAK

Kajian ini telah dijalankan untuk menentukan dan membandingkan perbezaan ciri-ciri fizikal dan kimia bagi budu yang dihasilkan di Kelantan dan Terengganu memandangkan hanya terdapat sedikit sahaja kajian yang telah dijalankan terhadap budu yang di hasilkan di Malaysia. Enam sampel budu dari tiga buah kilang dari Kelantan dan tiga buah kilang lagi dari negeri Terengganu telah diambil untuk dijalankan kajian. Kajian yang telah dijalankan terhadap sampel budu ialah kajian mengenai ciri-ciri fizikal, kandungan kimia, dan asid amino profil. Bagi ciri fizikal, hanya warna dan kelikatan bagi sampel sahaja yang dikaji. Manakala bagi kajian tentang kandungan kimia pula ialah pH, kandungan garam dan proksimat (kandungan air, protin, lemak, abu, dan karbohidrat). Analisis terakhir ialah untuk mengetahui kandungan asid amino dalam budu. Sebanyak tujuh belas asid amino telah dikira dengan menggunakan HPLC dalam kajian ini. Hasil kajian ini mendapati bahawa ciri fizikal dan kimia bagi sampel budu tidak jauh berbeza daripada data hasil kajian-kajian lepas. Sampel budu dalam kajian ini adalah bersifat sedikit berasid dengan pH antara 5.02 dan 5.92. Kelikatan budu pula menunjukkan tidak terdapat banyak perbezaan bererti antara semua sampel, iaitu antara 46.15 mPa-s dan 112.52 mPa-s. Keputusan kajian juga menunjukkan bahawa budu mengandungi kandungan garam dan protin yang tinggi iaitu masing-masing antara 38.37% - 51.23%, dan 9.69% - 15.02 %. Namun begitu, kandungan lemak dan karbohidrat adalah rendah dalam budu iaitu kurang daripada 1% lemak, dan 0.07% hingga 6.51% bagi karbohidrat. Kandungan debu dan air bagi sampel budu menunjukkan perbezaan yang tidak bererti. Sampel budu mengandungi antara 15.75% - 18.81% debu, dan 64.27% - 69.46% kandungan air. Bagi ujian kandungan asid amino profil, kandungan asid glutamik adalah paling banyak dalam semua sampel budu bagi kedua-dua negeri. Budu juga mengandungi asid amino perlu, seperti lysine, leucine, isoleucine, threonine, dan valine yang tinggi bagi semua sampel.