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SELECTED LOCAL FOOD PRODUCE

DEPARTMENT OF AGRICULTURE

DEPARTMENT OF AGRICULTURE AND FOOD SERVICES  
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# MICROBIOLOGICAL QUALITY IN 'SAMBAL BELACAN' OF SELECTED LOCAL FOOD PREMISES



By  
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PENGAKUAN DAN PENGESAHAN LAPORAN  
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Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

*Microbiological Quality in 'Sambal Belacan' of  
Selected Local Food Premises*

oleh *Fatri Nurhane Mahrouel*, No.Matrik *UK11457*

telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini  
dikemukakan kepada Jabatan *Sains Makanan*  
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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

The objectives of the present study were to investigate the microbial profiles in 'sambal belacan' which is one type of ready-to-eat street foods. 'Sambal belacan' is a Malaysian traditional condiment made from mix of chilies and 'belacan'. Salt, sugar, onions and lime juice were added to give more appealing taste. 27 samples of 'sambal belacan' were obtained from three different selected food premises near the University Malaysia Terengganu. For each premise, 9 samples were analysed for the presence of Total plate count, *Staphylococcus aureus* count, *Lactobacillus* count, *Psychrotrophic* count, coliform count, yeast and mould count and the presence of presumptive *Escherichia coli*. The results showed premise I, II and III contained all the microorganisms tested except Premise II was found negative for *Staphylococcus aureus* and Premise III was found negative for the presence of presumptive *Escherichia coli*. The results showed significant difference interaction ( $P \leq 0.05$ ) between microbial counts and premises, indicated that microbial counts were significantly affected by different premises. However, no significant differences ( $P \geq 0.05$ ) observed between mean microbial counts values of yeast and mould count among three premises studied. This study strongly indicated that the high microbial profiles found in 'sambal belacan' of selected food premises may contribute a potential risk of food poisoning incidence.



## ABSTRAK

Objektif kajian ini adalah untuk mengkaji profail mikroorganisma dalam sambal belacan yang mana merupakan sejenis makanan 'ready-to-eat'. Sambal belacan adalah salah satu makanan tradisional Malaysia yang diperbuat daripada campuran cili dan belacan. Garam, gula, bawang dan perahan limau nipis ditambah bagi menambahkan lagi rasa yang menyelerakan. 27 sampel sambal belacan diperoleh dari 3 buah premis makanan yang berbeza yang terletak berdekatan dengan Universiti Malaysia Terengganu (UMT). Di mana dari setiap kedai, 9 sampel telah diuji untuk mengesahkan kehadiran bilangan koloni Total Plate Count (TPC), *Staphylococcus aureus*, *Lactobacillus*, *Psychrophilic*, kolifom, kulat dan yis dan jangkaan kehadiran *Escherichia coli*. Keputusan kajian menunjukkan ujian kehadiran Total Plate Count (TPC), *Staphylococcus aureus*, *Lactobacillus*, *Psychrophilic*, kolifom, kulat dan yis dan jangkaan kehadiran *Escherichia coli* adalah positif bagi sampel dari premis 1. Sampel dari premis 2 menunjukkan tiada kehadiran *Staphylococcus aureus* namun positif bagi ujian mikroorganisma yang lain. Begitu juga premis 3 semua ujian kehadiran mikroorganisma adalah positif kecuali tiada kehadiran *Escherichia coli* dikenalpasti. Perbezaan yang bererti ( $p \leq 0.05$ ) dikenalpasti diantara bilangan koloni Total Plate Count (TPC), *Staphylococcus aureus*, *Lactobacillus*, *Psychrophilic* dan kolifom diantara ketiga-tiga premis kecuali kulat dan yis ( $p \geq 0.05$ ). Dapat disimpulkan juga profail mikroorganisma daripada sampel sambal belacan daripada ketiga-tiga kedai yang terpilih yang didapati tinggi jumlahnya. Oleh kerana faktor-faktor yang berpengaruh terhadap keputusan kajian ini, uji kaji disarankan dilakukan dalam makmal yang terkawal.