

MICROBIOLOGICAL QUALITY IN FISH AND BEEF CURRIES
SERVED IN THE POTENTIAL OF SELECTED LOCAL FOOD PREMISES

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MICROBIOLOGICAL QUALITY IN FISH AND BEEF CURRIES SERVED
WITH ROTI CANAI OF SELECTED LOCAL FOOD PREMISES

By

Premila Sugitha A/P Retnasingam

Research Report submitted in partial fulfilment of
the requirements for the degree of
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Department of Food Science
FACULTY OF AGROTECHNOLOGY AND FOOD SCIENCE
UNIVERSITI MALAYSIA TERENGGANU
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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:

*Microbiological Quality in Fish and Beef Curries
Served with Roti Canai of Selected Local Food
Premises*

oleh *Premila Sugitha a/p Retnasingam*, No.Matrik

telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini
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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 main objective was to determine the microbiological quality in fish and beef curries served with roti canai in selected premises around Kuala Nerus area. This research was conducted to obtain more knowledge on microbiological quality of curries served as accompaniment with roti canai due to insufficient data on the subject at present. A preliminary data was collected to determine the number of food premises that sold roti canai with curry as its accompaniment. Samples were obtained aseptically; they were placed in sterile plastic bags and immediately brought back to the Food Science Laboratory in Universiti Malaysia Terengganu, with its temperatures maintained at 0-4 °C. Microbiological analysis was carried out at room temperature within two hours of obtaining the samples. Curry samples were analysed for the level of total plate count (TPC), psychrotrophic count, *Staphylococcus aureus* count, coliform count, presence of presumptive *Escherichia coli*, and yeasts and mould count. The highest count for fish and beef curry was in yeasts and mould count, followed by total plate count, psychrotrophic and *S. aureus* count, and the lowest count was coliform count. There was a significant difference ($P < 0.05$) between the microbiological analysis conducted except *S. aureus* count in all three premises. However, there was no significant difference between the microbiological analysis in both curries ($P > 0.05$). The present study concluded that the fish and beef curries from selected food premises around Kuala Nerus area were acceptable by the results or information obtained in the research, and will be useful especially to food handlers who serve curry with roti canai everyday. Local authorities can also conduct further research on the microbiological quality of curries and include it into the Malaysian guidelines for ready-to-eat foods.

ABSTRAK

Objektif utama kajian ini adalah untuk menentukan kualiti mikrobiologi dalam kari ikan dan daging yang dihidangkan bersama roti canai di premis- premis yang terpilih di sekitar kawasan Kuala Nerus. Kajian ini dijalankan untuk memperolehi lebih maklumat tentang kualiti mikrobiologi dalam kari ikan dan daging kerana kekurangan maklumat pada masa kini. Satu kajian awal dijalankan untuk mengenalpasti jumlah premis yang menjual roti canai dengan kari. Sampel diambil secara aseptik; iaitu dimasukkan ke dalam beg plastik yang steril dan dibawa terus ke Makmal Sains Makanan di Universiti Malaysia Terengganu, dengan mengekalkan suhu sampel kari pada 0- 4 °C. Analisis mikrobiologi dijalankan pada suhu bilik dalam masa dua jam memperoleh sampel. Sampel-sampel kari dianalisis untuk menentukan tahap Total Plate Count, pengiraan psikotrofik, pengiraan *Staphylococcus aureus*, pengiraan koliform dan jangkitan *Escherichia coli*, serta pengiraan yis and kulat. Terdapat perbezaan yang signifikan ($P < 0.05$) antara analisis-analisis mikrobiologi kecuali pengiraan *S. aureus* dalam semua premis yang dikaji. Namun, tiada perbezaan signifikan diperolehi antara kesemua analisis mikrobiologi dalam kedua-dua jenis sampel kari ($P > 0.05$). Keputusan dari kajian ini menunjukkan bahawa kari-kari ikan dan daging yang diperolehi daripada premis-premis yang terpilih di sekitar kawasan Kuala Nerus dapat diterima dan berguna serta penting kepada penjual makanan terutamanya penjual roti canai. Pihak berkuasa tempatan juga boleh menjalankan kajian lanjutan dalam kualiti mikrobiologi dalam kari dan menyertakannya dalam senarai standard mikrobiologi untuk makanan yang sedia dimakan di Malaysia.