

UNIVERSITI TEKNOLOGI MARA

**THE MICROBIOLOGICAL QUALITY OF ICE CUBES
AND COLD DRINKS SAMPLED FROM STREET FOOD
VENDORS IN KLANG DISTRICT AREA.**

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**Project paper submitted in partial fulfillment of the requirements for
the degree of Bachelor in Environmental Health and Safety (Hons.)**

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Declaration by Student

Project entitled The Microbiological of Ice Cubes and Cold Drinks sampled from the Street Food Vendors in Klang District Area is a presentation of my original research work. Wherever contributions of others are involved, every effort is made to indicate this clearly, with due reference to the literature, and acknowledgement of collaborative research and discussions. The project was done under the guidance of Mr. Megat Azman Bin Megat Mokhtar as Project Supervisor and Dr. Nazri Bin Che Dom as Co-supervisor. It has been submitted to the Faculty of Health Sciences in partial fulfillment of the requirement for the Degree of Bachelor in Environmental Health and Safety (Hons).

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ABSTRACT

The Microbiological Quality of Ice Cubes and Cold Drinks Sampled from Street Food Vendors.

Siti Zuraida Binti Razali

Introduction: The use of ice in beverages is common among street food vendors in Malaysia although its safety to human consumptions remains unclear. Hence, a study on the microbiological quality of ice cubes and cold drinks sampled from street food vendors has been done in Klang City during May 2014 to June 2014. The purposes of this study are to determine the presence of coliform bacteria including *Escherichia coli* (*E.Coli*) in ice cubes and cold drinks sampled and to evaluate the environmental hygiene of the study area as well.

Methodology: This study conducted in Klang City, and a total of 37 street vendors were randomly chosen in this study. The total of all thirty seven (N=37) of ice cube sampled is taken and a total of seventy four (N=74) of cold drinks sampled has been sampled from the selected street food vendors. The total of 37 of ice cubes sampled and 74 sampled of cold drinks include variant types of beverages such as orange, corn, lychee, milo, soymilk, honeydew, grass jelly and carbonated drinks which were collected aseptically from 37 licensed street vendors around the Klang City area. While doing sampling an observation and hygiene rating has been done to evaluate the hygiene rating and environmental hygiene of the study area. Ice cubes samples were analyzed using Colilert and the Quanti-tray, while the cold drinks samples were analyzed using Brilliance Coliform Agar using membrane filtration technique.

Results: After incubation for about 18-24 hours at 37°C, results revealed that Coliform bacteria were detected both in ice cube samples and cold drinks samples. *Escherichia coli* (*E.Coli*) bacteria were detected 5.41% in both in ice cubes and cold drinks sampled. The median of the results of bacteria are significantly different ($p = <0.005$) for both samples. This cross sectional study was found to have overall relationship between microbiological findings of selected food examination and the hygiene rating.

Conclusion: Contamination of coliforms bacteria may due to improper handling of ice cubes and poor hygiene practices of food handlers. Therefore, it is highly recommended for a periodical and comprehensive check on the street vendors in ensuring better food and water for human consumption. Food handlers should attend the food handling course to ensure that they had been educate on personal hygiene and food safety in order to improve the microbiological quality of ice cubes and cold drinks sold by them.

Keywords: street vendor, microbiological quality, ice cubes, cold drink, coliform bacteria, *Escherichia Coli* bacteria.