

UNIVERSITI TEKNOLOGI MARA

**THE FECAL COLIFORM CONTAMINATION
OF ICE CUBES AND COLD DRINKS
SAMPLED FROM STREET FOOD VENDORS
AT KUALA SELANGOR AREA**

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**Project paper submitted in fulfillment of the requirements for
the degree of**

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Declaration by Student

Project entitled The Fecal Coliform Contamination of Ice Cubes and Cold Drinks Sampled from Street Food Vendors at Kuala Selangor 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 project and discussions. This project was done under the guidance and supervision of Tuan Haji Mohd Pozi Bin Mohd Tahir, Project Supervisor. It has been submitted to the Faculty of Health Sciences in partial fulfillment of the requirements for the Degree of Bachelor in Environmental Health and Safety (Hons).

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In the name of Allah, The Most Gracious, The Most Merciful, all the praises and thanks be to Allah, the Lord of the 'Alamin, The Most Gracious, The Most Merciful. The only owner of the day of Recompense, You (Alone) we worship and You (Alone) we ask for help, Guide us to the straightway, The way of those on whom You have bestowed Your grace, Not of those who earned Your anger, Nor of those who went astray.

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ABSTRACT

The Fecal Coliform Contamination of Ice Cubes and Cold Drinks Sampled from Street Food Vendors

Khairunnisa Binti Mohd Yusoff

Cold drinks are one of the street foods that sold by vendors in streets or public places. Ice cubes is commonly used in the preparation of cold drinks although its safety to human consumptions remains unclear. Hence, a study on the microbiological contamination of ice cubes and cold drinks sold by street food vendors has been conducted in Kuala Selangor District on February 2015. The purposes of this study are to screening the presence of coliform bacteria and *Escherichia coli* (*E.coli*) in ice cubes and cold drinks sampled. The total of twenty (N=20) of ice cubes sampled originated from two sources and forty-four (N=44) cold drinks samples was randomly selected from street food vendors around Kuala Selangor area. The cold drinks samples consist of variant type of cold drinks (syrup, orange, corn, tea, coconut, lime and etc) were collected aseptically from twenty (n=20) street food vendors in Kuala Selangor area. During a sampling, an observation and a checklist has been used to evaluate the hygienic condition of the premise and also the practices of the food handler. Ice cubes samples were analyzed using Colilert and the Quanti-tray, while cold drinks samples were analyzed using membrane filtration technique using Nutrient Agar and applying streak plate method in Eosin Methylene Blue (EMB) Agar to growth the bacteria. After being incubated for about 18-24 hours at 37°C, the results shows that coliform bacteria are detected in seventeen of ice cubes samples (85%) while there is no presence of *E.coli* in all ice cubes samples collected. The p value is >0.05 which is 0.344 for coliform bacteria and 1.00 for *E.coli* indicated that there is no significance between the two origin sources of ice cubes with the presence of microbiological contamination. Meanwhile, results for cold drinks samples reveals that all of the samples (N=44) have the presence of coliform bacteria and about 29.5% have the *E.coli* contamination. However, p value for pH of the cold drinks 0.044 which <0.05. It indicates that there is significance between the acidity of the cold drinks samples with the microbial contamination. There is a significance between the pH value of the cold drinks with the presence of microbial contamination as the p value <0.05, 0.044. However, the contamination of cold drinks and ice cubes may due to improper handling during preparation and poor hygiene practices of food handlers.

Keyword: street vendor, fecal coliform contamination, ice cubes, cold drinks, coliform bacteria, *Escherichia Coli* bacteria.