

**DETERMINATION OF HEAVY METALS AND BACTERIA IN DRINKS FROM
RESTAURANT AND STALLS IN SHAH ALAM**

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ABSTRACT

DETERMINATION OF HEAVY METALS AND BACTERIA IN DRINKS FROM RESTAURANT AND STALLS IN SHAH ALAM

The determination of heavy metals in several types of drinks (syrup and tea) from a restaurant at Section 7 and stalls at Section 2 and Dataran Cendekia, UiTM was carried out by Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES). Pb and Cu were detected in the syrup drink from Section 2 and Section 7 and the concentration were in this order: Cu>Pb. While Al and Cu were detect in the tea drink with the concentration order is Al>Cu. All detected heavy metals exceeded the permissible limit level of drinking water Quality Standards recommended by Ministry of Health, Malaysia. The analysis of total coliform bacteria of syrup and tea drinks from investigated areas was carried out by membrane filtration method. Both syrup and tea drinks from all investigated restaurant and stalls were found to be contaminated with total coliform bacteria. Based on the results obtained, it can be concluded that both syrup and tea drinks from all investigated restaurant and stalls are unsafe for drinking.

CHAPTER 1

INTRODUCTION

1.1 Background of study

Clean water is absolutely essential for healthy living. Adequate supply of fresh and clean drinking water is a basic need for all human beings on the earth, yet hundreds of millions of people worldwide are deprived of this. When the drinking water from public systems is laced with toxic chemicals, it shows that we are beginning to see that it's not hundreds of millions who have a problem with water but billions (Mark, 2005).

A drink is a liquid which is specifically prepared for human consumption. In addition to filling a basic human need, drinks form part of the human society. In most developed countries, the water supplied to households, commerce and industry is of drinking water standard even though only a very small proportion is actually consumed or used in food preparation. Over large parts of the world, humans drink water that contains disease vectors or pathogens or contain unacceptable levels of dissolved contaminants or solids in suspension. When an unknown material is found in a product, manufacturers need to know the source of contaminants. Some sources of contaminants have been from the environment, improper storage of the product or poor quality of raw material. Two sources that contribute to the contamination of drinks are heavy metals and bacteria.