

**DETERMINATION OF
MICROBIOLOGICAL QUALITY OF
DRINKING WATER FROM DIFFERENT
SOURCES IN UCSI UNIVERSITY**

TEO HUI JEN

Library
No. 1, Jalan...
50000 Kuala Lumpur
Tel: 603-9101 8120 Fax: 603-9101 8121
Website: www.ucsi.edu.my

**B. SC. (HONS.) FOOD SCIENCE &
NUTRITION
FACULTY OF APPLIED SCIENCES
UCSI UNIVERSITY**

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ABSTRACT

The objectives of this study were to evaluate the microbiological quality of different drinking water sources in UCSI University and to determine whether these sources of drinking water meet the basic requirement of water guidelines in terms of microbiological quality. This study also compared the microbiological quality among these six different water sources, i.e., tap water, reverse osmosis (RO) water, filtered water, UCSI bottled water, boiled water and water sold at food stalls in UCSI University. A total of three samples were randomly collected from each water sources and transported to undergo analysis immediately. All the water samples were analyzed for the presence of total coliforms, *Escherichia coli* (*E. coli*) and heterotrophic plate count (HPC). In terms of *E. coli*, all water sources met the basic requirement of water standards in Malaysia and other countries. No *E. coli* was detected in 100 mL of sample. However, in terms of both total coliforms and HPC indicator, most water sources were positive for these both indicators in their samples. The water sources that were positive for total coliforms were filtered water (2.69 ± 4.66 MPN/100 mL), RO water (5.73 ± 5.38 MPN/ 100 mL) and water sold at food stalls (5.96 ± 6.57 MPN/ 100 mL). These three water sources failed to meet the requirements of other countries such as Canada and United States. On the other hand, the heterotrophic organisms were found in almost all water sources except tap water. The water sources that had HPC values above the HPC maximum level in the guidelines of Brazil, Canada and United States (HPC < 500 CFU/ mL) were RO water and water sold at food stalls. Their mean values were 3.28 ± 0.30 Log₁₀ CFU/ mL and 2.90 ± 1.20 Log₁₀ CFU/ mL respectively. Overall, tap water, UCSI bottled water and boiled water were considered safe for drinking as they met all the microbiological requirements (total coliforms, *E. coli* and HPC) of Malaysia guidelines and other countries such as Canada, Brazil and United States.