

Drinking Water Quality Analysis of Water Dispensers in Colleges at UiTM Shah Alam

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Structured Abstract

Background: Ensuring the safety and quality of drinking water is essential in educational institutions where the demand for potable water is high. This study evaluates the quality of drinking water from water dispensers located in five colleges at UiTM Shah Alam, focusing on compliance with drinking water quality standards set by the World Health Organization (WHO) and Malaysia's Ministry of Health (MOH). Key parameters analyzed include physical, chemical and microbiological aspects of the water.

Methods: Drinking water samples were collected from water dispensers in five colleges (Melati, Seroja, Anggerik, Teratai, and Perindu). Analysis followed standard laboratory methods, determining physical parameters (pH, turbidity, total dissolved solids, and colour), chemical components (free chlorine, total hardness, and lead), and microbiological content (*E. coli*). Standard methods such as spectrophotometry, titration, drying and weighing, and membrane filtration were used. Results obtained were evaluated and compared against WHO and MOH guidelines for drinking water quality and safety.

Results: The analysis indicated that most physical and chemical parameters, including pH, colour, total dissolved solids, turbidity, lead and total hardness, were within acceptable limits across all five colleges. Residual free chlorine levels ranged from 0.20 to 0.24 mg/L, met WHO guidelines but were near the minimum threshold required for effective disinfection. *E. coli* contamination was found in samples from Melati (41 CFU/100 mL) and Seroja (2 CFU/100 mL) water dispensers, indicating the drinking water is unsafe for consumption, highlighting potential contamination risks due to insufficient maintenance or hygiene practices.

Conclusion: While most water quality parameters comply with safety standards, the presence of *E. coli* in some samples underscore the need for enhanced maintenance and monitoring of water dispensers. This study emphasizes the importance of regular assessments to ensure safe drinking water, aligning with Sustainable Development Goal 6 (SDG6) on access to clean water and sanitation in educational institutions

Keywords: Drinking water quality, water dispensers, UiTM Shah Alam, *E. coli*, water safety

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