

**A STUDY OF WATER QUALITY BETWEEN TAP  
WATER AND BOILED WATER CONSUMED BY THE  
STUDENTS OF UiTM NEGERI SEMBILAN KAMPUS  
KUALA PILAH**

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## TABLE OF CONTENTS

	PAGE
<b>ACKNOWLEDGEMENTS</b>	<b>iii</b>
<b>TABLE OF CONTENTS</b>	<b>iv</b>
<b>LISTS OF TABLES</b>	<b>vi</b>
<b>LIST OF FIGURES</b>	<b>vii</b>
<b>LIST OF ABBREVIATIONS</b>	<b>viii</b>
<b>ABSTRACT</b>	<b>x</b>
<b>ABSTRAK</b>	<b>xi</b>
<b>CHAPTER 1: INTRODUCTION</b>	
1.1 Background Study	1
1.2 Problem Statement	2
1.3 Significance of the Study	3
1.4 Objectives of the Study	4
<b>CHAPTER 2: LITERATURE REVIEW</b>	
2.1 UiTM Negeri Sembilan Kampus Kuala Pilah	5
2.2 Drinking Water	6
2.2.1 Boiled water	8
2.2.2 Tap water	9
2.3 Drinking Water Quality	10
2.3.1 Parameter of drinking water quality	12
2.3.1.1 Microbial parameter	12
2.3.1.2 Physicochemical parameter	13
2.3.1.3 Heavy metal detection	13
<b>CHAPTER 3: METHODOLOGY</b>	
3.1 Materials	15
3.1.1 Raw materials	15
3.1.2 Chemicals	15
3.1.3 Apparatus	15
3.2 Methods	16
3.2.1 Drinking water sampling method	16
3.2.2 Heterotrophic plate count	16
3.2.2.1 Serial dilution	16
3.2.2.2 Spread plate method	17
3.2.3 Physicochemical parameter analysis	17
3.2.4 Heavy metals determination	18
3.3 Statistical Analysis	18

<b>CHAPTER 4: RESULTS AND DISCUSSION</b>	
4.1 Heterotrophic Plate Count	20
4.2 Physicochemical Parameter Analysis	22
4.3 Heavy Metals Determination	24
4.4 Statistical Analysis	25
 <b>CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS</b>	 28
 <b>CITED REFERENCES</b>	 30
<b>APENDICES</b>	34
<b>CURRICULUM VITAE</b>	73

## **ABSTRACT**

### **A STUDY OF WATER QUALITY BETWEEN TAP WATER AND BOILED WATER CONSUMED BY THE STUDENTS OF UiTM NEGERI SEMBILAN KAMPUS KUALA PILAH**

This research studied the quality of drinking water consumed by the student and workers living in Kolej Kediaman UiTM Negeri Sembilan Kampus Kuala Pilah and Non-Resident (NR). Most of the students and workers ingest water from tap where it is boiled beforehand and bottled water. Drinking water samples were collected from several water taps. Tap water are boiled using different water heaters belong to students and workers. Each of the drinking water samples were collected in clean bottles rinsed with samples to eliminate variables such as contamination of bacteria. After taken into laboratory, samples were stored in 4°C. Microbial test was conducted immediately upon unsealing. Study showed that boiled water contain more bacteria compared to raw tap water. Next, physicochemical test and heavy metals determination were carried out. Temperature, pH, conductivity, total dissolved solid (TDS) and resistancy were evaluated. Tap water from Kolej Kediaman has a total bacteria number of  $4.70 \times 10^3$  CFU/ml, while boiled water from Kolej Kediaman has a total bacteria number of  $7.90 \times 10^4$  CFU/ml which is 16 times higher than raw tap water. NR contains  $1.70 \times 10^3$  CFU/ml and  $2.77 \times 10^4$  CFU/ml of total bacterial colonies in tap water and boiled water respectively. Result showed boiled water has higher microbacterial contamination compared to raw tap water. Temperature, pH, and resistancy of water sampled from Kolej Kediaman has lower values compared to water sample of NR. However, physicochemical values of boiled water are slightly higher than raw tap water. Lastly, Cu, Fe and Mg concentration were determined by Flame Atomic Absorption Spectrometer (FAAS). Water sample from Kolej Kediaman has higher Mg concentration but lower in Cu and Fe concentrations than water sample of NR. In spite of this, heavy metals in drinking water became concentrated after boiling. The results obtain were compared and assessed referring to Guideline for Drinking-water Quality (GDWQ) and Kawalan Mutu Air Minum (KMAM). In short, tap water and boiled water sampled do not exceed standard limits and safe to consume.