

**Detection of *Legionella pneumophila* in Air-conditioning Units of  
Selected Classrooms and Offices of DLSU-D and  
Hospital Wards of Medical Center Imus**

An Undergraduate Research  
Presented to  
The Faculty of the Biological Sciences Department  
College of Science  
De La Salle University – Dasmariñas

In Partial Fulfillment  
of the Requirements for the Degree  
Bachelor of Science in Biology  
(Major in Human Biology)

Maiquez, Mary Nicholle M.

March 2010

## ABSTRACT

The study aimed to detect *Legionella pneumophila* in air-conditioned units of selected hospital wards of Medical Center Imus (MCI) and selected classrooms and offices of De La Salle University – Dasmariñas (DLSU-D). The suspected isolates were inoculated in BCYE Broth and were streak plated in BCYE Agar with and without L-cysteine, and Blood Agar for 72 hours. Among 70 samples, 115 colonies were presumptive *L. pneumophila*, four of which conformed to the cultural and biochemical characteristics of *L. pneumophila*. It was concluded that *L. pneumophila* were able to thrive in air-conditioned units of selected hospital wards of MCI but not in classrooms and offices of DLSU-D.

## TABLE OF CONTENTS

<b>TITLE PAGE</b>	<b>i</b>
<b>APPROVAL SHEET</b>	<b>ii</b>
<b>ABSTRACT</b>	<b>iii</b>
<b>ACKNOWLEDGMENT</b>	<b>iv</b>
<b>TABLE OF CONTENTS</b>	<b>v</b>
<b>LIST OF TABLES</b>	<b>vii</b>
<b>LIST OF PLATES</b>	<b>viii</b>
<b>LIST OF APPENDICES</b>	<b>ix</b>
<b>1.0 INTRODUCTION</b>	<b>1</b>
1.1 Background of the Study	1
1.2 Theoretical and Conceptual Framework	4
1.3 Objective of the Study	4
1.4 Scope and Delimitation	5
1.5 Significance of the Study	6
1.6 Definition of Terms	6
<b>2.0 REVIEW OF LITERATURE</b>	<b>7</b>

2.1	Conceptual Literature	7
2.2	Related Studies	14
<b>3.0</b>	<b>METHODOLOGY</b>	<b>17</b>
3.1	Research Design	17
3.2	Research Setting	17
3.3	Research Procedure	17
3.4	Data gathering	19
<b>4.0</b>	<b>RESULTS AND DISCUSSIONS</b>	<b>20</b>
4.1	Results	20
4.2	Discussion	24
<b>5.0</b>	<b>CONCLUSIONS AND RECOMMENDATIONS</b>	<b>29</b>
5.1	Conclusions	29
5.2	Recommendations	29
<b>6.0</b>	<b>LITERATURE CITED</b>	<b>30</b>
<b>7.0</b>	<b>APPENDICES</b>	<b>41</b>
	<b>VITAE</b>	<b>60</b>

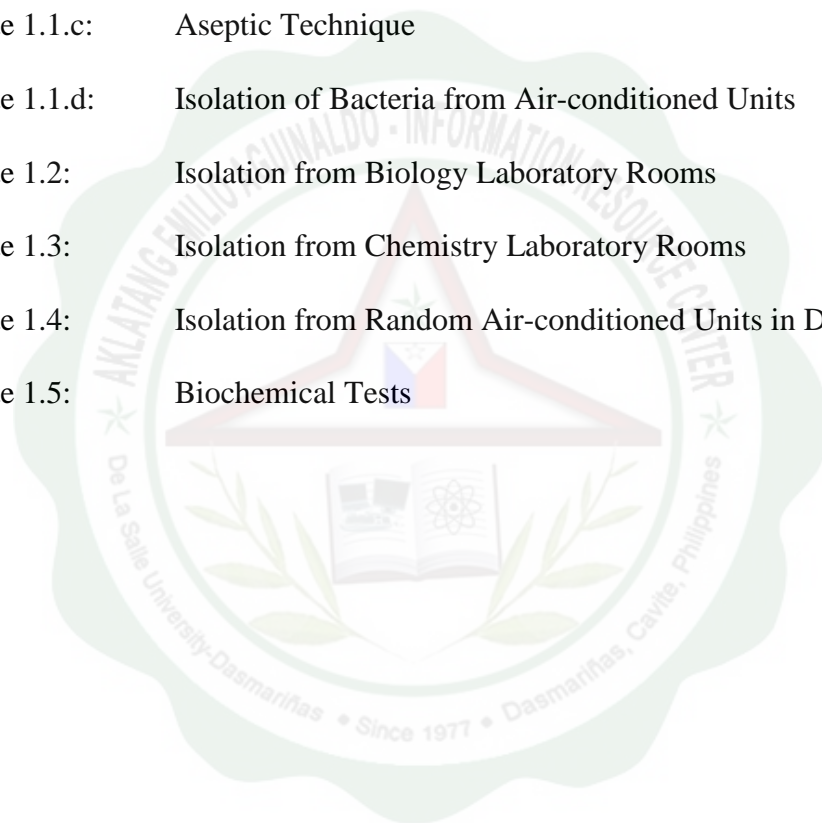
## LIST OF TABLES

TABLE 4.1:	Isolation of <i>Legionella pneumophila</i> and identification biochemical tests	20
TABLE 4.2:	Biochemical testing of suspected <i>Legionella pneumophila</i> from hospital wards	22



## LIST OF PLATES

Plate 1.1.a:	Preparation of Agar	52
Plate 1.1.b:	Inoculation of the Isolates in BCYE Agar	52
Plate 1.1.c:	Aseptic Technique	52
Plate 1.1.d:	Isolation of Bacteria from Air-conditioned Units	52
Plate 1.2:	Isolation from Biology Laboratory Rooms	53
Plate 1.3:	Isolation from Chemistry Laboratory Rooms	54
Plate 1.4:	Isolation from Random Air-conditioned Units in DLSU-D	57
Plate 1.5:	Biochemical Tests	57



## LIST OF APPENDICES

Appendix A:	Approval Letter	41
Appendix B:	Standard Procedure	42
Appendix C:	Raw Data	47
Appendix D:	Reading Table	51
Appendix E:	Photodocumentation	52

