

TABLE OF CONTENT

	Page
COVER.....	i
ENDORSEMENT FORM	ii
DECLARATION.....	iii
IDENTITY.....	iv
SUMMARY.....	vi
ABSTRACT.....	viii
ACKNOWLEDGEMENTS.....	ix
TABLE OF CONTENT	xi
LIST OF TABLES	xiii
LIST OF FIGURES	xiv
LIST OF APPENDICES	xv
ABBREVIATIONS AND SYMBOLS	xvi
CHAPTER 1 INTRODUCTION	1
1.1 Background.....	1
1.2 Problem Statement	2
1.3 Research Aim	2
1.4 Research Beneficience	3
1.4.1 Theory beneficience	3
1.4.2 Practices beneficience	3
1.5 Theoretical Base	3
CHAPTER 2 LITERATURE REVIEW	5
2.1 Ultra Violet-Visible Spectrophotometer	5
2.1.1 Part of spectrophotometer	5
2.1.2 Lambert-Beer's law	7
2.2 Validation Method	9
2.2.1 Selectivity	10
2.2.2 Linearity	11
2.2.3 Limit of detection	11
2.2.4 Limit of quantification	12
2.2.5 Precision	12
2.2.6 Accuracy	13
2.3 Tetracycline	14
2.3.1 Mechanism of action	15
2.3.2 Mechanism of resistance	16
2.4 Shrimp.....	18
2.4.1 Definition	18
2.4.2 Habitat	18
2.4.3 Morphology	19
CHAPTER 3 MATERIAL AND METHOD	21
3.1 Research Design	21
3.2 Sample and Sample Size	21

3.3 Research Variable	21
3.3.1 Independent variable	21
3.3.2 Dependent variable	21
3.3.3 Controlled variable	22
3.4 Operational Definition	22
3.5 Research Location and Time	23
3.6 Research Material and Equipment	23
3.6.1 Research materials	23
3.6.2 Research equipment	23
3.7 Research Procedure	24
3.7.1 Preparation of tetracycline-HCl standard solution	24
3.7.2 Preparation of sample solution	24
3.7.3 Validation procedure	25
3.8 Research Flowchart	27
CHAPTER 4 RESEARCH RESULT	28
4.1 Maximum Wavelength Optimization	28
4.2 Selectivity	28
4.3 Complex Stability	29
4.4 Linearity	29
4.5 Accuracy and Precision	31
4.6 Limit of Detection and Limit of Quantitation	31
CHAPTER 5 DISCUSSION	32
CHAPTER 6 CONCLUSION AND SUGGESTIONS	35
6.1 Conclusion	35
6.2 Suggestions	35
REFERENCES	36
APPENDICES	40

LIST OF TABLES

Table	
Page	
2.1. Data needed for validation	10
4.1 Data of tetracycline-HCl absorbance at different observations time	29
4.2 Data of tetracycline-HCl absorbance at 273 nm	30
4.3 Data of recovery and coefficient of variation	31

LIST OF FIGURES

Figure		
Page		
2.1 Shrimp Anatomy External View		19
4.1 Spectrum of tertacycline-HCl		28
4.2 Spectrum of sample matrices		28
4.3 Standard curve of tetracycline-HCl.....		30

LIST OF APPENDICES

Appendix	
Page	
1. Preparation of 0.1 N HCl	40
2. Preparation of McIlvaine-EDTA buffer	41
3. Calculation of tetracycline concentrations	42
4. Calculation of coefficient of variation of function (V_{x_0})	43
5. Data for accuracy and precision.....	44
6. Calculation of limit of detection (LOD) and limit of quantitation (LOQ)	46
7. Calculation of %recovery, standard deviation (SD), and coefficient of variation (CV).	47

ABBREVIATIONS AND SYMBOLS

ARB	= Antibiotic resistant bacteria
CV	= Coefficient of variation
EDTA	= Ethylene diamine tetraacetic acid
HCl	= Hydrochloric acid
HPLC	= High performance liquid chromatography
g	= Gram
ml	= Mililiter
N	= Normality
nm	= Nanometer
LOD	= Limit of detection
LOQ	= Limit of quantitation
pH	= Potential hydrogen
ppm	= Part per million
r	= Correlation coefficient
rpm	= Revolutions per minute
RSD	= Relative standard deviation
SD	= Standard deviation
Sy	= Standard deviation of the regression line
UV	= Ultra violet
V _{x0}	= Coefficient of variation of function
%recovery	= Recovery percentage
μl	= Mikroliter
λ	= Wavelength