

Table of Contents

Title page	i
Approval Page	ii
Declaration	iii
Foreword	iv
Table of Content	v
List of Table	vii
List of Figure	viii
Abstract	ix
CHAPTER I. Introduction	
I.1. Background	1
I.2. Problems	4
I.3. Objectives	4
I.4. Originality	5
I.5. Benefits	6
CHAPTER II. Literature Review	
II.1. Literature Review	7
II.1.1. Leptospirosis	7
II.1.2. Pathogenesis of Leptospirosis.	8
II.1.3. Leptospirosis Diagnosis	9
II.1.4. Specimens for Leptospirosis Diagnosis	10
II.1.5. DNA Isolation and Reliable PCR Product	11
II.1.6. Storage Time and Temperature	14
II.2. Theoretical Framework	15
II.3. Conceptual Framework	16
CHAPTER III. Materials and Methods	
III.1. Types and design of study	17
III.2. Variable of study	17
III.3. Operational Definition	17
III.4. Material	18
III.5. Methods	20
III.5.1. Spike urine	20
III.5.2. DNA extraction from urine sample with solid phase nucleic acid	21
Silica based with spin column	21
Spin column cromathography using resin as separation matrix	23
III.5.3. Solution based DNA isolation	24
Guanidine isothiocyanate	24
III.5.4. Storage time and temperature	25

III.5.5. Concentration and purity.....	26
III.5.6 Leptospira DNA Amplification	26
III.6. Statistical analysis	27
III.7. Ethical Consideration	27
 CHAPTER IV. Results and Discussion	
IV.1 Results	29
IV.1.1 Total of DNA Concentration	29
IV.1.2. DNA Purity.....	30
IV.1.3. The Leptospira DNA Amplification.....	30
IV.1.4. Stability of Genomic Leptospira DNA at -80 ⁰ C	32
IV.1.5. Stability of Genomic Leptospira DNA at -20 ⁰ C	34
IV.1.5. Stability of Genomic Leptospira DNA at 4 ⁰ C.....	36
IV.2. Discussion	38
 CHAPTER V. Conclusion	
V.1. Conclusion	44
V.2. Summary	44
 REFERENCES.....	47
APPENDIXS.....	48

Table List

Table 1. Similar researchs	4
Table 2. The DNA purity from silica, resin a, resin b, and guanidine isolation methods.	30
Table 3. The Leptospira DNA amplification from silica, resin a, resin b and guanidine isolation methods.....	31
Table 4. Summary of trends in changes in the quality and quantity of DNA	38

Figure List

Figure 1. Total DNA concentration from silica, resin a, resin b, and guanidine isolation methods.	29
Figure 2. Standard curve	31
Figure 3. The fluctuation of DNA concentration at -80 ⁰ C.....	32
Figure 4. The fluctuation of DNA purity at -80 ⁰ C	32
Figure 5. The fluctuation of amplified DNA at -80 ⁰ C	33
Figure 6. The fluctuation of DNA concentration at -20 ⁰ C.....	34
Figure 7. The fluctuation of DNA purity at -20 ⁰ C	34
Figure 8. The fluctuation of amplified DNA at -20 ⁰ C	35
Figure 9. The fluctuation of DNA concentration at 4 ⁰ C	36
Figure 10. The fluctuation of DNA purity at 4 ⁰ C	36
Figure 11. The fluctuation of amplified DNA at 4 ⁰ C.....	37