
TABLE OF CONTENTS

SELF DECLARATION AGAINST PLAGIARISM	i
ABSTRACT	ii
DEDICATIONS	iii
ACKNOWLEDGEMENTS	iv
PREFACE	v
ABBREVIATION	vi
TABLE OF CONTENTS	vii
LIST OF TABLE	ix
LIST OF FIGURES	x
CHAPTER I INTRODUCTION	1
1.1 Rationale	1
1.2 Theoretical Framework	2
1.3 Conceptual Framework / Paradigm.....	2
1.4 Statement of the Problem.....	3
1.5 Objectives and Hypotheses	4
1.6 Assumption	5
1.7 Scope and Delimitation.....	5
1.8 Importance of the Study	5
CHAPTER II REVIEW OF LITERATURE AND STUDIES	6
2.1 Related Works.....	6
2.2 The Relationship between <i>Anopheles'</i> life cycle and weather factors	6
2.3 Group Method of Data Handling	7
2.4 GMDH Polynomial Neural Network	8
CHAPTER III RESEARCH METHODOLOGY	10
3.1 Research Design.....	10
3.2 System Design and Method Implementation	11
3.2.1 General Diagram of the System	11
3.2.1.1 Learning Process	12
3.2.1.1.1 Data Preprocessing.....	13
3.2.1.1.2 Pattern Recognition (GMDH PNN Learning).....	14
3.2.1.2 Forecasting Process.....	15

3.2.1.2.1	Predicting Incidence (GMDH PNN Testing)	16
3.2.1.2.2	Denormalization process.....	16
3.2.2	Malaria Prediction System.....	17
3.2.3	Polynomial Neural Network using Entropy and Information Gain	19
3.3	Experiment Scenario	21
3.4	Instrumentation and Data Collection	25
3.5	Analysis of the Data.....	28
3.6	Research Environment	29
CHAPTER IV RESULT AND EVALUATION		30
4.1	Observation Results	30
4.1.1	Prediction using main Attributes.....	30
4.1.2	Prediction using all Attributes.....	34
4.1.3	Prediction using Information Gain.....	38
4.1.4	Prediction using Feed Forward BP	42
4.1.5	Prediction using ARIMA	43
4.2	Result Comparison.....	45
4.3	Summary of findings.....	52
CHAPTER V CONCLUSION AND RECOMMENDATIONS.....		56
5.1	Conclusions.....	56
5.2	Future Works	56
BIBLIOGRAPHY		58
APPENDIX A: MALARIA AND WEATHER DATA SET		60
APPENDIX B: EXPERIMENT RESULT IN SCENARIO 1.....		62
APPENDIX C: EXPERIMENT RESULT IN SCENARIO 2.....		67
APPENDIX D: EXPERIMENT RESULT IN SCENARIO 3		72
APPENDIX E: EXPERIMENT RESULT IN SCENARIO 4 AND SCENARIO 5		77
CURRICULUM VITAE		79