

LIST OF CONTENTS

| | |
|--|------|
| APPROVAL PAGE | ii |
| SELF DECLARATION AGAINST PLAGIARISM | i |
| ABSTRACT | i |
| PREFACE | iii |
| DEDICATION | iv |
| LIST OF CONTENTS | v |
| LIST OF FIGURES..... | vii |
| LIST OF TABLES | viii |
| CHAPTER 1 INTRODUCTION | 1 |
| 1.1 Background | 1 |
| 1.2 Problems..... | 3 |
| 1.2.1 Problem Limitations..... | 3 |
| 1.2.2 Problems | 3 |
| 1.3 Objectives..... | 4 |
| 1.4 Hypothesis..... | 4 |
| 1.5 Research Method..... | 4 |
| CHAPTER 2 REFERENCE TRACING | 6 |
| 2.1 Body Measurements..... | 6 |
| 2.2 Primal Cut Weight Range Guide..... | 7 |
| 2.3 Digital Image..... | 8 |
| 2.2.1 Definition of Digital Image | 8 |
| 2.2.2 Concept of Gray, RGB, YCbCr, and HSV Image | |
| 9 | |
| 2.2.3 Concept of Digital Image Processing..... | 11 |

| | | |
|----------------------------------|--|-----------|
| 2.4 | Localized Region Based Active Contour | 13 |
| 2.5 | Linear Regression..... | 16 |
| CHAPTER 3 SYSTEM DESIGN | | 19 |
| 3.1 | Design process | 19 |
| 3.2 | Image Acquisition..... | 19 |
| 3.3 | Calculation Process | 20 |
| 3.4 | Implementation process..... | 22 |
| 3.5 | Experiment design and plan | 24 |
| 3.5.1 | Image Pre-processing..... | 24 |
| 3.5.2 | Image Feature Extraction..... | 27 |
| 3.5.3 | Calculation Process..... | 29 |
| CHAPTER 4 SYSTEM ANALYSIS | | 31 |
| 4.1 | Image Acquisition | 31 |
| 4.2 | Image Pre-processing | 36 |
| 4.3 | Image Feature Extraction | 40 |
| 4.3.1 | Side Picture of Cattle | 40 |
| 4.3.2 | Chest Circumference..... | 42 |
| 4.4 | Linear Regression..... | 43 |
| 4.5 | Scroll Formula and Winter Formula | 44 |
| 4.6 | Evaluation method which will be used for analyzing the experiment result..... | 45 |
| CHAPTER 5 CLOSING | | 47 |
| 5.1 | Conclusion..... | 47 |
| 5.2 | Advice | 48 |
| APPENDIX | | 51 |
| Codes of Program | | 51 |