

## LIST OF FIGURES

Figure I.1 Operators Taking Sack Bean.....	17
Figure I.2 Graph of SNQ Result .....	17
Figure II.1 Front and Rear View of the Human Skeletal System .....	22
Figure II.2 Classification and Codification of the vertebrae.....	26
Figure II.3 Simple model of the lower back (low back) were studied by Chaffin for the analysis of static lifting activities.....	29
Figure II.4 Diagram of the strength model .....	30
Figure II.5 Joint Angles Dialog for 3DSSPP version 4.0 .....	31
Figure II.6 Nordic Body Map .....	36
Figure II.7 Table Frequency Multiplier (FM) .....	43
Figure II.8 Coupling Multiplier Table (CM) .....	44
Figure III.1 Conceptual Model.....	50
Figure III.2 Systematic Problem Solving.....	52
Figure IV.1 Business Processes (Farmer - PT. ABO FARM - Exporter).....	57
Figure IV.2 Processes that is Happens in Collector.....	58
Figure IV.3 Operators Taking a Sack of Beans .....	59
Figure IV.4 Operator Carrying a Sack of Beans.....	59
Figure IV.5 Operator Putting a Sack of Beans.....	60
Figure IV.6 Illustration of proposal container .....	66
Figure IV.7 The Chart of L5/S1 Compression Force while taking a sack of beans .....	67
Figure IV.8 The Chart of L5/S1 Compression Force while carrying a sack of beans .....	67
Figure IV.9 The Chart of L5/S1 Compression Force while putting a sack of beans .....	68
Figure IV.10 Selected Work Posture .....	68
Figure IV.11 Anthropometric Data.....	69
Figure IV.12 Data Hands Forces .....	69
Figure IV.13 Data Input of Joint Angles of Taking Posture .....	71
Figure IV.14 Posture of Taking a Sack of Beans.....	71
Figure IV.15 Assessment Result for Taking a Sack Beans Posture.....	72
Figure IV.16 Data Input of Joint Angles of Taking Posture .....	73
Figure IV.17 Posture of Carrying a Sack Beans .....	74
Figure IV.18 Assessment Result for Carrying a Sack Beans Posture.....	74
Figure IV.19 Data Input of Joint Angles of Taking Posture .....	76
Figure IV.20 Posture of Putting a Sack Beans.....	76
Figure IV.21 Assessment Result for Putting a Sack Beans Posture .....	77
Figure IV.22 The Result of RWL Calculation.....	78
Figure IV.23 The Result of LI Calculation .....	78
Figure V.1 Style Assessment Press L5/S1 in Every Activity .....	79

Figure V.2 The Posture of Taking Activity on Alternative 1 .....	86
Figure V.3 The Posture of Carrying Activity on Alternative 1 .....	87
Figure V.4 The Posture of Putting Activity on Alternative 1 .....	87
Figure V.5 Illustration of inclined plane.....	90
Figure V.6 The Posture of Taking Activity for Alternative 2.....	91
Figure V.7 The Posture of Carrying Activity for Alternative 2.....	91
Figure V.8 The Posture of Putting Activity for Alternative 2 .....	91
Figure V.9 The top and side view of the containers placement on the truck.....	95
Figure V.10 The top and side view of the sacks placement on the truck.....	95