CHAPTER 1
INTRODUCTION

1.1 Background

Cattle farming has become one of the major commodity in the world and performed with a variety of technologies to achieve the better results. General purpose of cattle farming is to make high profit based on application of good management production principles. One of criteria for a success in beef cattle farming is had healthy with considerable weight.

Currently there are various ways to determine the weight of beefcattle. One of which is done by measuring the chest circumference and body length, and there's also made combine with the height of the beef cattle and in some conditions are doing it based on the chest circumference and body length of the cattle. With a digital image to the beefcattle which processed by any kind specific digital image processing algorithm in every part from cattle's body could be identified, so it could be used to analyze the the beefcattle weight. Beefcattle weight calculation could be done based on two dimensional image by using specific formula which taking into certain scale in actual unit of account.

Besides the whole of cattle body's weight by digital image processing it also can be obtained the weight of cattle per part as we can look at the image below:

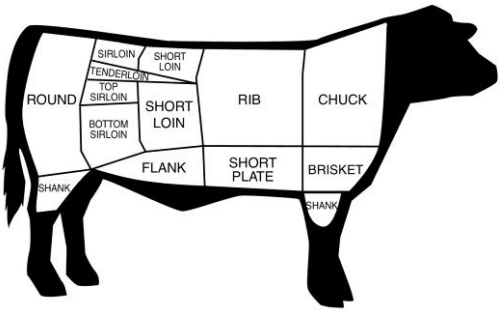

Figure 1-1 Types of beef[2]

The image of the cattle will be segmented based on part as we can look above. After that then made extensive comparison of pixels with a weight per part of beefcattle's body. Based on comparisons could be determined the weight of cattle. Suggested segmentation division:

1. round and rear shank

2. sirloin, short loin, tenderloin, top sirloin, bottom sirloin, flank

3. rib and short plate

4. chunk, brisket and front shank

1.2 Problems

The problems in this research can be divided into two sections, which are the problem limitations and the problems itself.

1.2.1 Problem Limitations

Problem limitations in this research are:

a. Image is side picture of beef cattle and front picture of beef cattle
b. Image from Dinas Pertanian dan Ketahanan Pangan Bandung
c. Image taken from a type of brahman cattle

1.2.2 Problems

Meanwhile, problems appointed in this research are:

1 How to separate the beef cattle with background
2 How to find appropriate method to predict the carcass weight of beef cattle
3 How to design and implement a predicting the carcass weight of beef cattle system
4 How to make a system that could perform the predicting the carcass weight of beef cattle

1.3 Objectives

The research objective can be mentioned as follows:

1. Spectral segmentation method apply and algorithm identification appropriate for physical measurement of the cattle's body.
2. Design and implement of cattle's body physical measurement system.
3. Analyze system of cattle's body physical measurement performance.

1.4 Hypothesis

By research, the characteristics of image could be seen clearly, so the segmentation process to distinguish every part of cattle's body for the weight measurement can be done easily. Direction of the study using an effective tool with efficient results. Hopefully this research can achieve accuracy values of up to 90%.

1.5 Research Method

Research metods used in this research are:

1. Literature study which is related to Body Measurements, Localized Region Based Active Contour, and calculation process.
2. Analyze problems with the technical approach.

3. Techniques of data collecting in this thesis data is by acquisitions using camera to get the image. From the data obtained, then the analysis will be done procedurally.

   The steps of the study include:

   a. Define and formulate the problem
   b. Do literature study
   c. Formulate the hypothesis
   d. Determined the model or researchdesign
   e. Collecting the data
   f. Processing and presenting the information
   g. Analyze and interpret
   h. Make conclusions
   i. Create a report