# Bab I Preliminary

## I.1 Background

Agriculture is the utilization of biological resources by humans to produce food, industrial raw materials or energy sources, as well as to manage their environment. The utilization of biological resources, including in agriculture is commonly understood as the cultivation of crops or farm (Dimas Setiawan: 2008). Agriculture in Indonesia is divided into two, namely agricultural crops and food crops. Agricultural crops such as cocoa, oil palm and other crops while food such as corn, vegetables, rice, and other fruits.

One company that is engaged in agriculture is PT. ABO FARM located in Ciwidey, West Java. PT. ABO FARM is a company that focuses on sales in the vegetable beans. In the processing of vegetable bean itself, there are several processes which will be one of which is the acceptance of the collectors beans beans which use plastic in the loading process that will be taken by using a pickup truck. During the loading process occurring fractures resulting beans on beans is rejected and considered as a reject.

Here is the reject data of beans received from collector's beans by PT. ABO FARM.

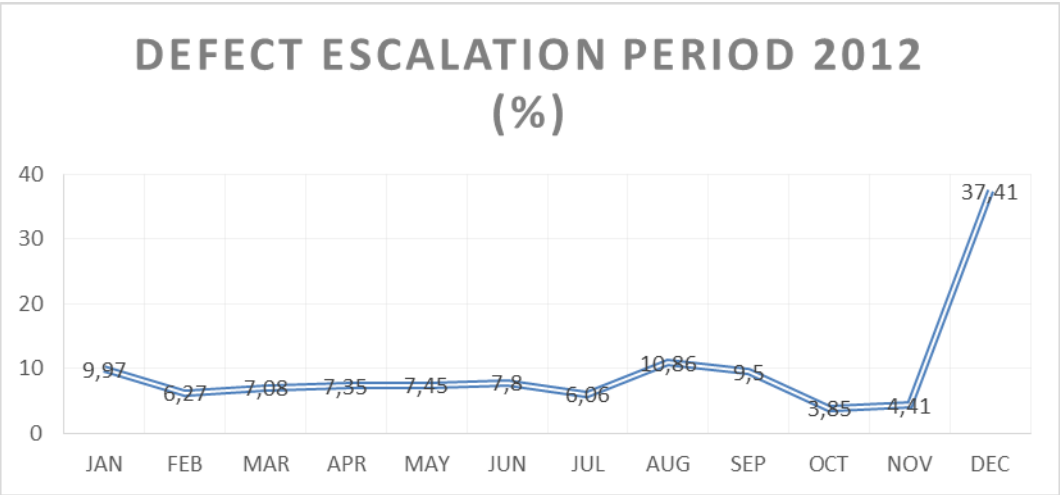


Figure I.1 Defect Escalation Graphic From Collecting Area to PT. Abo Farm (Period 2012)

Based on the above graph it can be seen that reject happens fluctuated and ascend significantly in December 2012 the percentage was 37.41%. Based on the data obtained from the company's historic, the percentage of the cause of the reject is as follows:

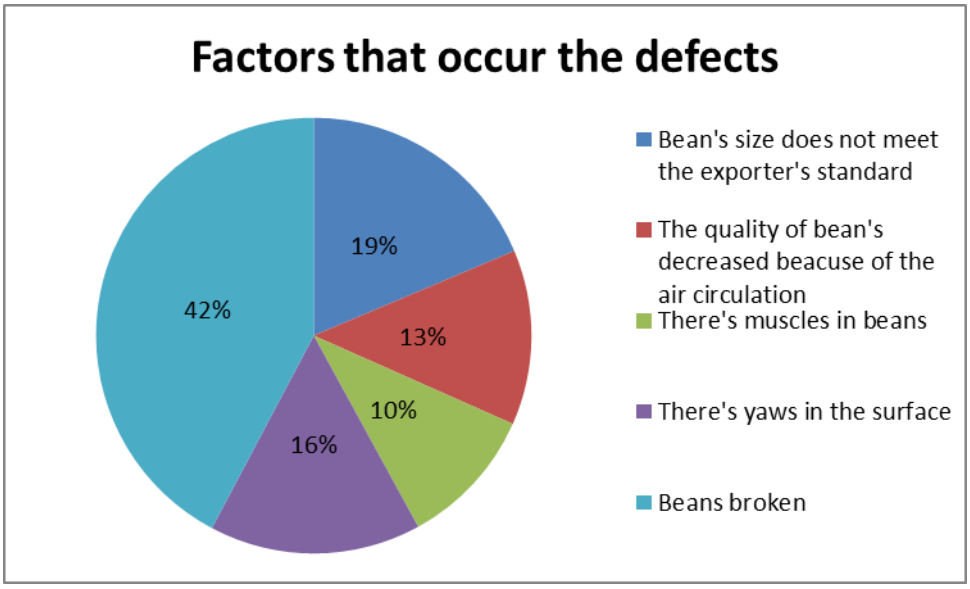


Figure I.2 The Factors That Cause by The Occurence of Reject

(Source: PT. Abo Farm, 2012)

Based on Figure I.2 described the percentage of defect types presented by the exporter to the PT. ABO FARM and a major cause of reject is that having broken beans by 42%. The following is an explanation of the five types of factors the reject.

After getting the data on the number and type of defect on shipping beans from collectors beans to the company, PT. Abo Farm need to perform an action or attempt to deal with defects that occur. This is done so that the defect which felt by PT. Abo Farm will not happen again. PT. Abo Farm needs to evaluate the performance of the delivery, and then look for a solution for improving the delivery of quality beans from collecting beans area so that the company’s target will able to eliminate the defect may occur, or at least be minimized. This can be done by finding out the root causes of defects first.

Table I.1 The Definition of Beans Type's Defect

| Defect | Information |
|---|---|
| Bean's size does not meet the exporter's standard | A situation where the size of beans out of the following specifications:<br>1. Baby beans: 12-15cm<br>2. Normal beans: 15-17cm<br>3. Super beans: 17-20cm |
| The quality of bean's decreased beacause of the air circulation | A situation where evaporation occurs so that the water content of beans decreased. |
| There's muscles in beans | A situation in which the form bean wavy/ not straight. |
| There's yaws in the surface | A situation in which there are black spots on the surface of the beans. |
| Beans broken | A situation in which:<br>1. The stem of broken beans<br>2. There is no short-sighted beans and<br>3. There is nail's trail on the surface of the beans. |

Based on interviews with PT. Abo Farm, there are several factors suspected to be the cause of the defect in beans delivery of collecting beans area to the PT. Abo Farm. Table I.1 describes the factors thought to be the cause of the defect and the handling is done by the company in dealing with the causative factor.

From Table I.1 can be seen that PT. Abo Farm has to take some action in response to the large number of reject that happens. But in fact the defects that occur despite treatment has been given by PT. Abo Farm, still the defect occurred again.

Table I.2 Prevention That Has Been Done By The Company

| Defect Types | Causes | Prevention that has been done |
|---|---|---|
| The size does not fit standard bean exporters | Sorting errors | Provides pokayoke to sorting beans |
| The decrease in quality due to air circulation | Unavailability of cooling storage | Perform sorting beans as soon as possible |
| There are muscles on beans | Harvest the beans too long | Harvesting is done on a scheduled basis and in a timely |
| There yaws | The lack of protection by pesticides | Conduct periodic pesticide |
| Beans broken | Exposed nails at the time of lifting | No action |
| | Error treatment | No action |

From Table I.1 can be seen that PT. Abo Farm has to take some action in response to the large number of reject that happens. But in fact the defects that occur despite treatment has been given by PT. Abo Farm, still the defect occurred again.

Viewing the data obtained and based on factors suspected as a cause of reject on shipping beans from collector's beans area to PT. Abo Farm, a study is needed to produce a minimal amount of reject.

## I.2 Problem Formulation

In this section the formulation of the research described phrased into research questions. The formulation of this problem is as follows:

1. What are the factors that causing the occurence of defect?
2. What can be done to reduce the reject in loading process of collecting beans to PT. Abo Farm?

## I.3 Research Objectives

This section describes the purpose of the research conducted.

1. Identifying the cause of the reject in the loading process from the collector beans to PT. Abo Farm.
2. Formulate recommendations to the PT. Abo Farm how to improve the quality of beans using Six Sigma method in loading process

## I.4 Limitations of the Study

1. The product of PT. Abo Farm which will be discuss in this research is beans only.
2. The study focuses on loading process only.
3. The data used is based on data taken during January - December 2012.
4. This study stop at improve step.
5. This study did not measure up to the stage of the pressure suffered by the beans at the bottom level.
6. This study just issued a product specification, did not reached the stage of design.

## I.5 Benefits of Research

The benefits of this research is as follows:

1. The company can anticipate the reject on the loading process so that can reduce the defects.
2. The company can implement the expected improvements in order to improve the quality of beans in loading process.

## I.6 Systematics Writing

This study described the systematic writing as follows:

**Chapter I** **Preliminary**

This chapter contains a description of the background research, the formulation of the problem, the purpose of the study, limitation of the study, the benefits of research, and systematic writing.

**Chapter II** **Theoritical Basis**

This chapter contains the literature relevant to the problem under study, the research method used is the six sigma method.

**Chapter III Research Methodology**

In this chapter the conceptual model described in any study variables and systematic problem solving to investigate issues perusal. Stages traversed: the preliminary stages of research, data processing stages, and the stages of analysis and proposals.

**Chapter IV Collecting and Data Processing**

This chapter describes the process of collecting and processing data related to the research. Outlined also about the resluts of processing the data have been obtained.

**Chapter V Analysis**

In this chapter explained about the analysis of data that have been processed in in the previous chapter, consisting of analytical process and analysis of the root causes of the problem, and the results of the determination of priority improvements that can be made about the proposed improvments are outlined and given to PT. Abo Farm

**Chapter VI Conclusion and Recommendation**

This chapter describes the conclusions of the research that has been done and advice given based on this research