CHAPTER I INTRODUCTION

I.1 Research Background

In a manufacturing company, inventory has an important role and cannot be avoided because it is needed to support the production process. The inventory can be in the form of finished goods, raw materials, supplies, spare parts and work in process (Bahagia, 2006). The production can run smoothly or not depends on the availability of the raw materials. A management of the inventory is needed to make sure that the raw materials is neither overstock nor stockout. It is because overstock can cause higher cost while stockout can cause a loss to the company due to not able to meet the demands.

ILY Pharmaceutical is an industry in Bandung that is manufacturing various type of medicines such as caplet, tablet, capsule, dry syrup, syrup and external medicine fluids. The medicines then will be distributed to fulfill the demands of all health units associated with Indonesian Army all over Indonesia. ILY Pharmaceutical has several warehouses, which are raw materials warehouse, packaging material warehouse, and finished goods warehouse.

One of the problems faced by ILY Pharmaceutical is regarding the inventory of raw materials. The stock of raw materials is always bigger than the demand thus causing overstock of the materials. It is found out that the overstock is caused by the poor inventory management. ILY Pharmaceutical is procuring the raw materials quarterly and always order the raw materials in bulk to the supplier in order to cope with the fluctuating demand of the raw materials. Unfortunately, up until now, ILY Pharmaceutical does not have an exact calculation for the safety stock, the reorder point and maximum inventory level that is needed to help managing the inventory of raw materials in the warehouse. So, the raw materials ordered is done merely on the hunch of the personnel or when there is a stock out. This conditions then further caused the inventory of raw materials to be out of control.

Figure I.1 shows that every month the stock of raw materials in ILY Pharmaceutical is always way higher than the demand itself. It can be concluded that the raw materials are having an overstock. Figure I.2 also shows that the overstock happens in every raw material.

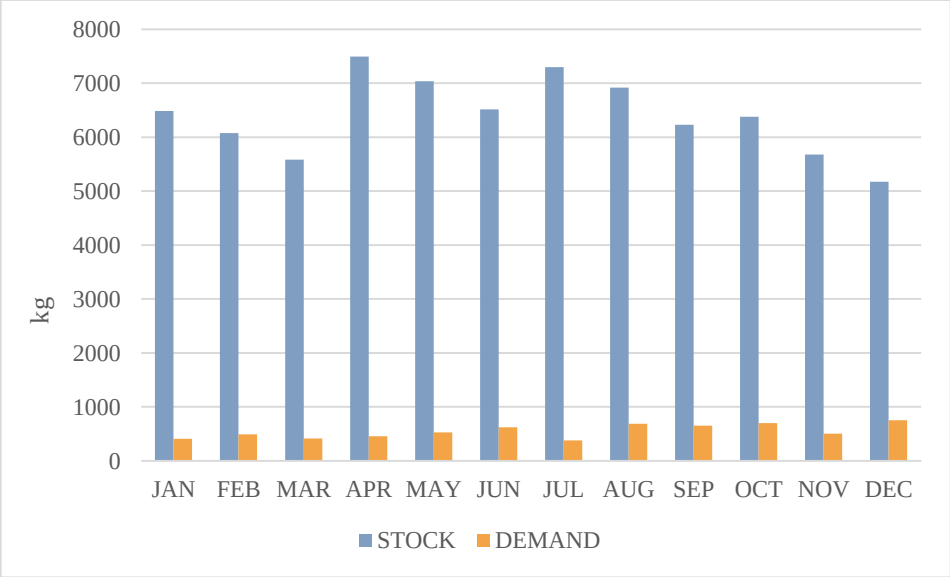

Figure I.1 Comparison of Stock and Demand in 2016

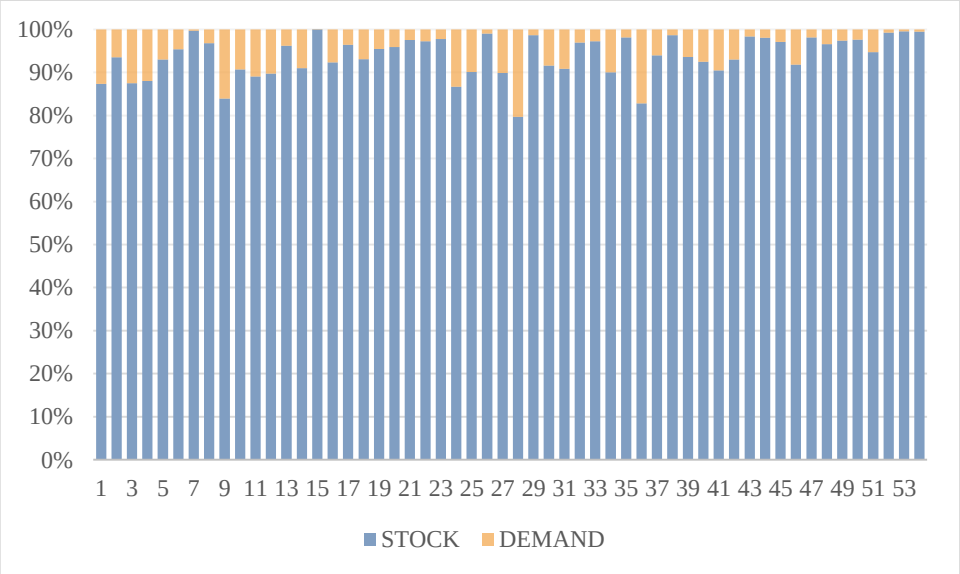

Figure I.2 Comparison of Stock and Demand in 2016 (per SKU)

This overstock conditions can further bring loss to the company because the higher the amount of the inventory then the holding cost is higher also. Figure I.3 shows the total inventory cost of raw materials for every month in 2016.

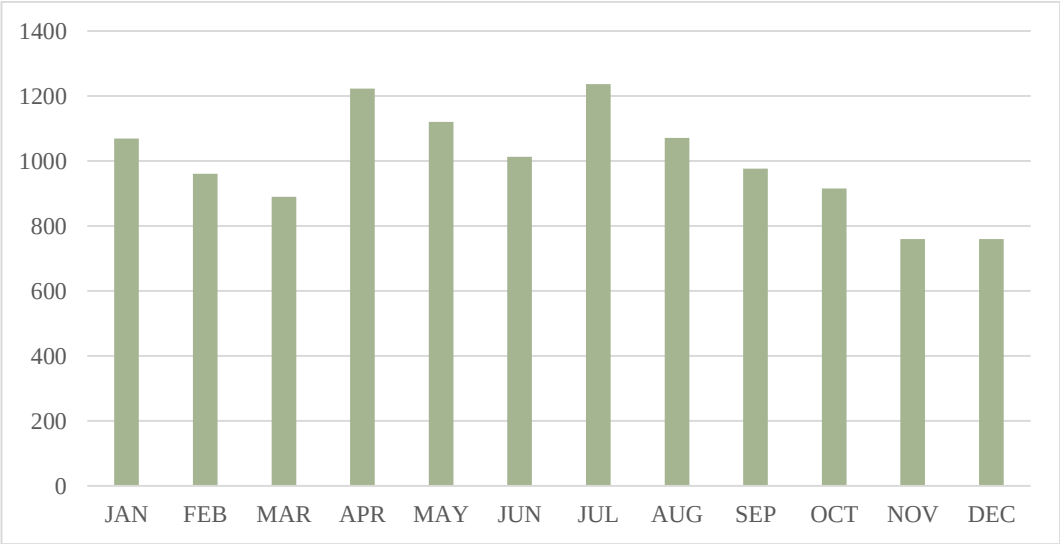

Figure I.3 Total Inventory Cost in 2016

Not only causing the holding cost to be higher, the probability of the raw materials that will be expired before used will be higher also. The expired materials will bring loss to the company because the materials cannot be used anymore and must be disposed. In 2016, the total inventory cost has reached $12.194. The overstock conditions then must be solved so that the raw materials inventory can be well controlled and the total inventory cost can be minimized as well. Therefore, further research is needed to solve the problem by using inventory policy that will help determining the policy for the raw materials.

Referencing from the previous research done by Merdalina in 2016, by using periodic review (R, s, S) and periodic review (R, S) able minimize the total inventory cost of the lubricant oil in PT. NYZ. Looking at the existing condition of ILY Pharmaceutical that is reviewing and procuring the raw materials quarterly so, in this research, periodic review (R, s, S) system and periodic review (R, S) system will be used for the proposed inventory policy.

I.2 Problem Identification

Based on the research background, the problem identification for this research is how is the inventory policy for raw materials in ILY Pharmaceutical to minimize the total inventory cost by using Periodic Review (R, s, S) and (R, S)?

I.3 Research Objectives

From the problem identification, then the research objective is to determine the inventory policy for raw materials in ILY Pharmaceutical to minimize the total inventory cost by using Periodic Review (R, s, S) and (R, S).

I.4 Research Limitations

The limitations of this research are as follows:

1. The data used in this research is historical data from January 2016 - December 2016.
2. The price is assumed constant for every quantity and the price increases are ignored.
3. There is no price discount when ordering in bulk.
4. The research is only done for raw materials that is actively used in 2016.
5. The expiry date of the raw material is not put into consideration.
6. The lead time is assumed to be fixed.
7. This research is only as a recommendation not reached the stage of implementation.

I.5 Benefits of Research

The benefits of this research are:

1. Academic

   This research can be useful as a material for broaden knowledge as well as understanding the application of supply chain management especially about inventory policy problems for managing raw materials in pharmaceutical.

2. Practical

   This study can provide a useful contribution to ILY Pharmaceutical as decision support system to determine a better inventory policy for managing the raw materials in the company.

I.6 Writing Systematics

Chapter 1 Introduction

This chapter describes about the background of the research, problem identification, the purpose of the research, the limitation of the research, the benefit of the research, and the writing systematics.

Chapter II Literature Review

This chapter contains a description of the mindset and the development of scientific research topic as supporting references in conducting this research. In addition, this chapter contains related theory and method that will be used to solved the problem.

Chapter III Research Methodology

This chapter describes the conceptual model and problem-solving systematics of this research in detail including problem identification, data collecting and processing, and the conclusion and recommendation

Chapter IV Data Collecting and Processing

In this chapter, the primary and secondary data used for supporting this research will be presented and the data processing will be conducted and being analyzed to get the recommendation for problem solving.

Chapter V Analysis

In this chapter, the analysis against the result of data processing obtained from previous chapter, will be conducted. Besides, the comparative analysis also will be performed in this chapter to compare the initial conditions and the recommendation proposed by the researcher.

Chapter VI Conclusion and Suggestion

This chapter describes the summary of the research study and the results as well as the suggestions for the next study.