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The Analysis of Proper Raw Material Inventory Control to Increase Sales Results in the Home Industry of Sihobuk Martabe Tarutung Beans

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ABSTRACT

This study aims to determine the implementation of raw material inventory control that should be carried out by Home Industy Kacang Sihobuk Martabe Tarutung in the production of Sihobuk Beans. The data analysis method used is descriptive qualitative data analysis, using the economic order quantity method, safety stockt and he reorder point. Based on the analysis of the peanut raw materials purchase for optimal Sihobuk production according to the economic order quantity method during 2019, which was 7,271 kg per order and the frequency of buyers was 2 times, while according to company policy it was 1,000 kg and the order frequency was 12 times. The quantity of safety stock according to the economic order quantity method in 2019 is 291.67 kg while according to company policy it does not exist because the company does not implement a safety stock system in the production process and the point of reordering 330 kg. The analysis it is known that the total cost of inventories according to the economic order quantity is Rp. 2,073,304, while based on company policy the total cost of inventory is Rp. 5,132,000, so that the Home Industy Sihobuk Martabe Tarutung using the economic order quantity method can save an inventory cost of Rp. 3,058,696. The forecast results for the use of raw materials in the Sihobuk Martabe Home Industry for 2020 are 15,090 kg.

1. Introduction

Sipoholon District is one of the sub-districts in North Tapanuli Regency that has sectoral potential (tourism) and a fairly good commodity in various aspects of its designation, for example as residential land and agricultural land. The potentials that exist if they do not receive special attention, will forever be the only potentials, not the very important product output. One of the potentials that this sub-district has is agricultural potential, promising local natural resource potentials.

The potential of natural resources owned by this area, peanut farming is quite possible to grow well. It can be seen from the rainfall that is not too high so that the soil can always be moist and loose, adequate radiation and relatively fertile and sandy. With the potential for local natural resources , one of the efforts made by the community in North Tapanuli is to build a small industry for processing Sihobuk beans. This home industry can be considered as the key that can lead people to prosperity, at least as a wheel of economic development. Besides being able to increase the production of more viable peanuts, this industry can also solve the problem of increasingly narrowing employment opportunities in the agricultural sector.

2. Review of Literature

A. The Definition of Inventory

At every level of the company, whether large or small, medium or large companies, inventory is very important for the survival of the company. In addition, without inventory, the company will be faced with the risk that one day it cannot fulfill consumer desires. Companies or organizations need supplies for reasons, namely the uncertainty of demand (sudden demand), the uncertainty of the time frame for orders.

Rusdiana (2014: 374) states that "Inventories are all items or resources stored (stock) for use in the business processes of a company or organization". Mulyanto and Wulandari (2013: 162) argue that "Inventory

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is material or goods stored, which will be used to fulfill certain purposes, for example for use in the production or assembly process, for resale, or for spare parts of an equipment or machine" .

In general, inventory is the main merchandise in a trading company. Inventory is included in the current asset class of the company that plays an important role in generating company profits. In general, the term inventory is used to indicate goods that are held for resale or used to produce goods for sale. In a trading company, inventories are goods that are obtained or purchased for the purpose of being resold without changing the goods themselves.

B. The Definition of Raw Materials

All companies that produce to produce one or several kinds of products will always need raw materials for the implementation of the production process. Raw materials are an important input in various productions. The shortage of available raw materials can result in the production process being stopped due to running out of raw materials for processing. However, too large a raw material can result in high inventory in the company which can cause various risks and high costs incurred by the company on the inventory.

Raw materials are a number of items purchased from suppliers and will be used or processed into products that will be produced by the company. According to Ristono (2009: 5) there are two types of raw material groups, namely:

1) Direct raw materials are materials that make up and are part of finished goods whose costs can be easily traced from the cost of the finished goods. The amount of direct raw materials is variable, meaning that it is highly dependent or influenced by the size of the production volume or changes in output.
2) Indirect raw materials are materials that are used in the production process, but it is difficult to determine the cost for each finished product. , 2007).

3. Research Methodology

The method in this research is descriptive research method which is qualitative in nature. According to Sugiyono (2013), "Qualitative data analysis is the process of systematically searching and compiling data obtained from observations and interviews by coordinating data, compiling into patterns, choosing which ones are important and which ones to study and making conclusions so that they are understood.

A. Place and time of research

This research was conducted at the Peanut Sihobuk Martabe Home industry which is located at Jalan Tarutung - Balige, Sipoholon District, North Tapanuli Regency. The time needed in this study starts from July to September 2020.

B. Population and Sample

According to Sugiyono (2013), "Population is a generalization area consisting of objects / subjects which include certain qualities and characteristics that are determined by researchers to be studied and then draw conclusions". From the above understanding, the population in this study is the supply of raw materials for peanuts used in the Sihobuk Peanut Home Industry in carrying out the Sihobuk Peanut production process in 2019.

4. Resullt And Discussion

Home Industry Sihobuk Martabe Nuts in its operational activities, the procurement of supplies that have been carried out so far has been adjusted to the company's needs to meet customer needs, It can be seen by the absence of a vacuum of raw materials. The following is a clear description of the state of the supply of raw materials in the Sihobuk Martabe Home Industry in 2019:

Table 1
The Control of Purchase of Raw Materials (Kg) January - December 2019

Time (Month)	A lot Booking	A lot of Booking (Kg)	Booking Quantity (Kg)	The Use of Raw material (Kg)	Stock (Kg)
January	1	100	1.100	1.100	100
February	1	100	950	1.000	50
March	1	50	950	950	50
April	1	50	950	950	50
May	1	50	800	800	50
June	1	50	800	800	50
July	1	50	850	850	50
August	1	50	850	850	50
September	1	50	1.000	1.000	50
October	1	50	1.100	1.100	50

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Time (Month)	A lot Booking	A lot of Booking (Kg)	Booking Quantity (Kg)	The Use of Raw material (Kg)	Stock (Kg)
November	1	50	1.300	1.150	200
December	1	200	1.350	1.450	100
Total	**12**	**850**	**12.000**	12.000	850

Source : Primary data is processed

Based on the table above, it shows that the number of orders made by the company to purchase raw materials for the Home Industry Sihobuk Martabe Beans is 12 times. Meanwhile, the order quantity using the company's method for raw material for peanuts varies from 800 kg to 1,350 kg.

The raw materials that the company does vary each month, depending on the amount of purchase and usage. To be able to find out the optimal order quantity of raw materials in processing Sihobuk Nuts at the Home Industry Sihobuk Martabe Nuts, first, you must know the amount of raw material needed each month. The amount of raw material needed in 2019 for the Sihobuk Martabe Home Industry business is as follows:

Table 2

The Order Quantity and Use of Raw Materials (Kg) January - December 2019

Time (Month)	The Quantity of Booking Raw material (Kg)	Use of Raw MaterialsKg)
January	1.100	1.100
February	950	1.000
March	950	950
April	950	950
May	800	800
June	800	800
July	850	850
August	850	850
September	1.000	1.000
October	1.100	1.100
November	1.300	1.150
December	1.350	1.450
Total	**12.000**	**12.000**

Source: Primary Data

So far, the purchase of raw materials is based on previous sales by purchasing raw materials every month. The company makes purchases every month on the grounds that it is an inventory in the production process and to anticipate an increase in raw material prices and delays in delivery. Thus the company pays less attention to the number of purchases that are economical. By ignoring the purchase amount of raw materials, the company has to bear larger storage and ordering costs.

A. The Analysis of Raw Material Needs Based on Company Policy

The raw material requirement for groundnut in 2019 is 12,000 kg. The frequency of purchases made by the company during 2019 was 12 times. So the average purchase amount of raw materials during the year:

$$\text{The Average quantity of raw material purchases} = \frac{12.000}{12}$$

$$\text{The average amount of raw material purchases} = 1.000 \text{ Kg}$$

Table 3

The Raw Material Ordering Fees

No	The Fees	Details
1	Telephone Charges	Rp. 200.000
2	Transportation Charges	Rp. 4.800.000
3	Other costs	Rp. 2.700.000
	Total	Rp.7.700.000

Source: Primary data

So the cost of ordering groundnut raw materials in 2019 is:

Total cost = Rp. 7.700.000

B. The Analysis of Raw Material Requirements Using the EOQ Method

Raw material inventories need to be controlled properly so that the production process can run smoothly and optimize the use of inventory costs. This is very important to be done by all companies considering that inventory is the initial link in the chain of production activities. Inventory control can optimize the continuity of the production process related to the quantity of raw materials used. Inventories of raw materials that will be used in the production process of a company are generally held through purchases. The method of purchasing is carried out by following a series of procedures in accordance with the conditions of the company in such a way that the purchase can support production activities with the use of the least cost. This can be

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obtained by calculating the most optimal procurement of raw material quantities, known as the EOQ (Economical Order Quantity) method. This model is used to determine the amount of inventory that can give rise to the total cost of inventory.

Table 4
The Comparison of Raw Material Inventories between Company Policies and Using the EOQ Method

No	Information	The Company policy	The Method of EOQ
1	The Average purchase quantity	1.000 kg	7.271 Kg
2	The Purchase frequency	12 times	2 times
3	The Cost per order	Rp. 641.666	Rp.2.073.304
4	TheSafety supplies	-	291,67 kg
5	The Message point back	-	330 kg
The Total inventory cost		Rp. 5.132.000	Rp. 2.073.304

Based on table it can be seen that there is quite a large difference between the policies implemented by the company with the Economic Order Quantity method because EOQ is assisted by the frequency of purchases for one year and the time interval for purchasing raw materials again. By knowing the purchase amount, it can be used as a plan in controlling the supply of raw materials in the Sihobuk Martabe Home Industry.

From the calculation, the comparison of company policies with the EOQ method results in the following results:

1) The average purchase of economical raw materials using the EOQ method is more efficient with a total of 7,271 kg with 2 orders within 1 year and only costs an inventory of Rp 2,073,304. When compared with the company's policy of placing orders 12 times a year with an amount of 1,000 kg which costs Rp 5,132,000 in inventory. then by using the EOQ method the company can save inventory costs of Rp. 3,058,696
2) In its policy, the Home Industry Company for Sihobuk Martabe beans does not only set an average ending inventory of 66.67 kg. Meanwhile, in the analysis of the EOQ (economic order quantity) method, the company must hold a safety stock of 291.67 kg to smooth the production process.
3) There is a Re Order Point in using the EOQ method to anticipate delays in raw materials. According to the analysis using the EOQ method, the company must reorder when the raw material inventory is at the level of 330 kg.

C. FIFO (First in First Out) method

The FIFO method is often not visible directly on the physical flow of the goods because the collection of goods from the warehouse is more based on the arrangement of the goods. Thus the FIFO method is more visible in the calculation of the cost of goods. In the FIFO method, the costs used to purchase goods for the first time will be recognized as the cost of goods sold (COGS). In the FIFO method, the inventory of goods issued for production or sale, the value is based on the price according to the order in which it is first entered. So, for the valuation on the remaining inventory, means the price is based on the new price or the price of the last order.

Goods that are first entered (purchased) are goods that first come out (are sold). First-in-first-out this method states that the inventory with the initial cost (first) in will be sold (used) first, so that the ending inventory is valued at the cost of the last in (purchased) inventory. This method tends to produce inventory with high value and has an impact on the value of the assets of the company being purchased. The FIFO method is a very realistic inventory valuation method and is suitable for all product characteristics. The reality is that the goods are first purchased, so that the goods are sold first. If the company uses the FIFO method in valuing inventory, assuming there has been an increase in the price of goods or inflation

Table 5
Control of Purchase of Raw Materials (Kg) January - December 2019 Using the FIFO Method

Times (Month)	The Initial inventory (kg)	The Raw material receipt (kg)	The Use of Raw Materials (Kg)	The End of Inventory (Kg)
01 Januari	100	-	100	-
03 January	-	1.100	1.000	100
01 February	100	-	100	-

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Times (Month)	The Initial inventory (kg)	The Raw material receipt (kg)	The Use of Raw Materials (Kg)	The End of Inventory (Kg)
09 February	-	950	900	50
01 March	50	-	50	-
08 March	-	950	900	50
01 April	50	-	50	-
05 April	-	950	900	50
01 May	50	-	50	-
06 May	-	800	750	50
01 June	50	-	50	-
03 June	-	800	750	50
01 July	50	-	50	-
04 July	-	850	800	50
01 August	50	-	50	-
06 August	-	850	800	50
01 September	50	-	50	-
07 September	-	1.000	950	50
01 October	50	-	50	-
08 October	-	1.100	1.050	50
01 Nopember	50	-	50	-
05 Nopember	-	1.300	1.100	200
01 December	200	-	150	-
03 December	-	1.350	1.300	100
Total	**850**	**12.000**	**12.000**	**850**

Source: Primary data processed (Carter: 2009)

D. The Increase of Sales Results

Errors in determining the amount of inventory at the company will reduce the profits obtained by the company. With the supply of raw materials that are too large at the company, it will increase the amount of storage costs. This cost varies according to the size of the amount of raw materials stored in the warehouse. If the supply of raw materials is too small, it can also reduce the company's profits, this is due to the cost of stock out, which is the cost that occurs due to the company running out of inventory, which includes the loss of opportunities for profit because consumer demand cannot be served, inefficient production processes and costs incurred as a result of purchasing materials simultaneously.

The product is one of the factors that affect the level of sales volume as the goods or services offered by the company are in accordance with the level of consumer needs. In the process of processing a product, the main point is the raw material. Raw materials are materials used in making products where these materials are seen as a whole in the finished product.

The Quality raw materials will produce quality products as well. Therefore, in selecting raw materials for business, care is needed so as not to be harmed by the parties concerned. Because without raw materials, the production process cannot run. Likewise, in the processing of Sihobuk Nuts, the raw material is peanuts which have been obtained from farmers. Quality and quality of goods is one of the factors that influence sales volume. With good quality, consumers will remain loyal to the products of the company, and vice versa if the quality of the products offered is not good, consumers will turn away.

In the procurement of raw materials for peanuts for the production process at the Sihobuk Home Industry, Sihobuk Nuts must be really careful so that the products produced will have good quality, thus the level of consumer satisfaction with sihobuk nuts will increase. The quality of an item is one of the factors that affect sales volume. With good quality, consumers will remain loyal to the products of the company, and vice versa if the quality of the products offered is not good, consumers will turn to other products. If consumers are satisfied with the results of the products the company produces, the sales level of the tapioca bean products will increase. Apart from the quality of raw materials that need to be considered in increasing sales is the quantity of raw material for peanuts. In the production process, the availability of raw materials is the most important thing so that the production process runs well in order to meet consumer demand.

5. Conclusion

Based on the descriptions that have been described in research that analyzes the control of raw material supplies, several conclusions can be drawn, namely as follows:

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1) The raw material inventory control system in the Sihobuk Martabe Home Industry is less effective in terms of inventory costs. This is indicated by the high cost of inventory generated by the company compared to the control system using the EOQ method which results in savings.
2) The company's policy in determining the purchase of raw materials has not resulted in a minimum cost of inventory. It can be seen from the quantity of raw material purchases made by the company in 2019 which was 1,000 kg with a purchase frequency of 12 times. Meanwhile, based on EOQ analysis, the quantity of raw material purchases is 7,271 kg with a frequency of purchasing twice a year.
3) There is no quantity of safety stock and re-order points according to company policy in 2019. Meanwhile, based on the analysis of the EOQ method, the quantity of safety stock is 291.67 kg and the return message point is 330 kg.
4) The inventory valuation method used in the Sihobuk Martabe Home Industry is the FIFO (first in first out) method, which is an inventory valuation method that assumes that the first incoming goods are assumed to come out first.
5) From the forecasting results of the raw material requirements for the Sihobuk Martabe Home Industry for 2020, it is 15,090 kg.

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