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ANALYSIS OF INVENTORY PLANNING FOR COOKING OIL IN THE TANK OF PT INDOFOOD CBP SUKSES MAKMUR TBK NOODLE DIVISION SEMARANG BRANCH

Jesica Kartika Aritonang 1, Agung Budiatmo, S.Sos., M.M. 2
[1,2] Diponegoro University

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ABSTRACT

In inventory management, supervision is a crucial part of optimizing the efficiency and effectiveness of the cooking oil storage warehouse's operations. Inventory planning is key to ensuring optimal cooking oil storage, avoiding shortages due to spills or leaks, and reducing company losses. This study aims to evaluate cooking oil inventory planning considering inventory methods, control, and warehouse supervision. This research employs a qualitative research method with a descriptive approach. Data sources include primary data obtained through interviews, observations, secondary data from company documents, and supporting books related to inventory planning. Data collection techniques include field observations, interviews, and documentation. Data analysis involves data reduction, data presentation, and drawing conclusions. The research findings indicate that cooking oil inventory planning in the tank warehouse using the PDCA method (Plan, Do, Check, Act) can enhance inventory management efficiency and effectiveness. Supporting factors include the transformation of manual supervision systems into automation to enable more efficient monitoring. However, supervision constraints persist due to the lack of automation systems for real-time monitoring and limitations in warehouse operational staff, resulting in less effective operations. The use of planning methods with PDCA can improve cooking oil inventory management in the warehouse, enhancing operational efficiency, and reducing inventory risks or excesses.

Corresponding Author:
Jesica Kartika Aritonang
Diponegoro University
Email: jesicakartikaaritona@students.undip.ac.id
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INTRODUCTION

Monitoring cooking oil inventories in tank warehouses is an important part of optimizing the efficiency and effectiveness of the company's operations. Proper inventory

planning can reduce inventory costs, avoid inventory shortages, and ensure the availability of raw materials needed for production. In recent years, the company has experienced several problems in monitoring cooking oil inventories, such as inventory shortages due to spills or leaks, as well as rising inventory costs.

In this study, we will evaluate the planning of cooking oil inventory in tank warehouses by considering inventory methods, control, and supervision. The purpose of this study is to improve the efficiency and effectiveness of cooking oil inventory management by using the PDCA (Plan-Do-Check-Act) method and improve the manual monitoring system to automation to allow for more efficient monitoring.

METHODS

Planning of cooking oil inventory in the tank warehouse of PT Indofood CBP Sukses Makmur Tbk noodle division Semarang branch is still not effective and efficient in its operational activities, so it is necessary to plan in the management of cooking oil inventory in the tank warehouse using the PDCA method (plan, do, check, act) by paying attention to implementation planning, inspection, and action in implementing improvements in the sustainable inventory planning process. This method is expected to be able to increase the efficiency and productivity of PT Indofood CBP Sukses Makmur Tbk Noodle Division Semarang Branch so that cooking oil inventory planning becomes more effective against production demand

RESULT AND DISCUSSION

A. Plan

Plan is one of the stages in the PDCA method. A plan is the first step to identify a problem and set goals and make a plan to achieve those goals. This step involves collecting data and analyzing it to determine the root cause of the problem and develop the necessary plan.

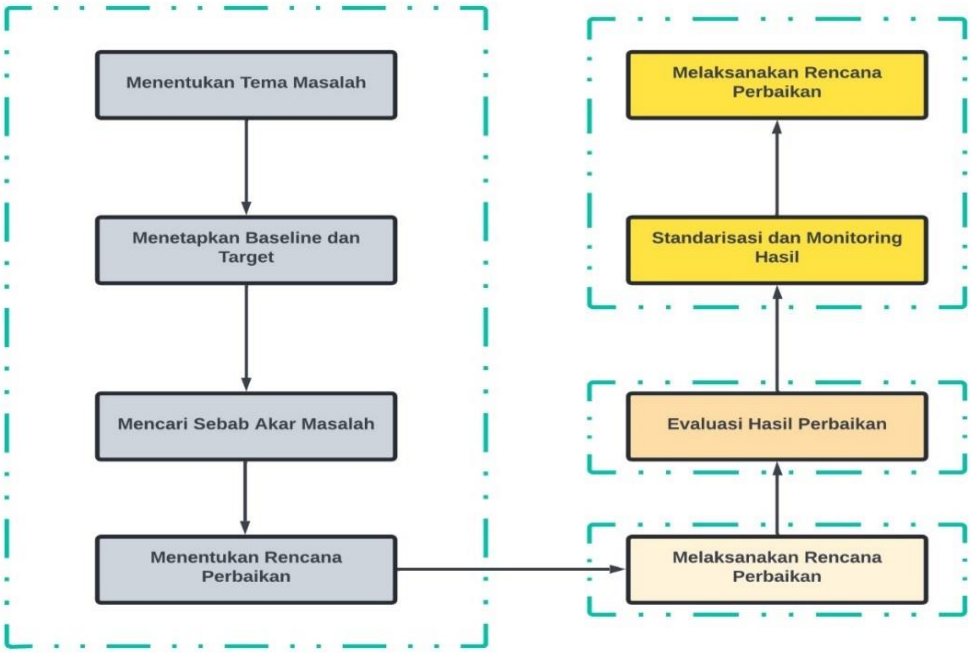

Figure 1 PDCA implementation process

Source: Processed Data of the Author 2024

PLAN Description:

The Planning Stage is divided into 4 steps, namely,

1) Determine the problem theme. Choosing a theme for problems that occur in the work environment and can be solved where the completion of the improvement is recommended to be completed within a not too long period of time. Problems can be found in various ways, such as input, suggestions or complaints from workers in the warehouse between teams, both internal and external. In addition, it can also focus on obstacles that often occur in a work process flow.

2) Setting baselines and targets. Determine the scope and targets to be achieved. Scope is important to determine the scope of the project you want to work on and which parts are focused on improvement.

3) Finding the root cause of the problem. Identify what is at the root of the problem. To find the root of the problem, various ways are carried out at PT Indofood Semarang branch. The first is for non-process PDCA projects, namely brainstorming.

Once the cause is known, brainstorming is carried out again to determine the best solution to solve the problem. The results can be seen in the mind map image.

4) Determine the improvement plan. Identify Solutions to root problems that were found in the previous stage. To present the repair plan at PT Indofood Semarang Branch using a 5W+1H table.

Once the cause is known, brainstorming is carried out again to determine the best solution to solve the problem. The results can be seen in the mind map image.

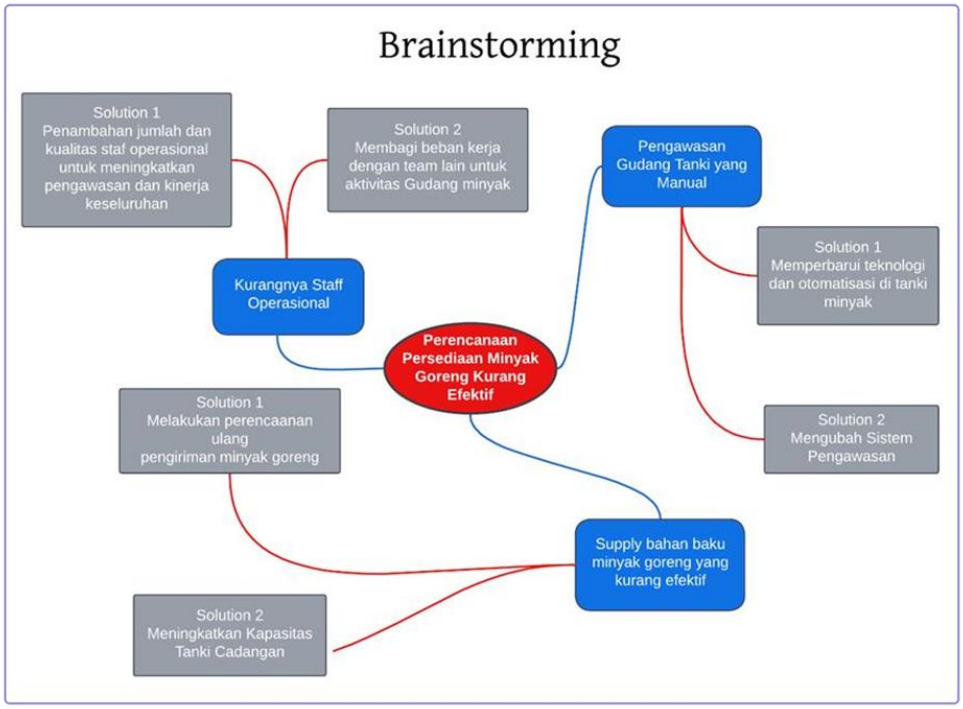

Figure 2 Brainstorming of Solution Design

Source: Processed Data of the Author 2024

Brainstorming Caption

Key Problem: Cooking Oil Inventory Planning Is Less Effective

Ineffective planning of cooking oil inventory can result in a shortage or excess stock, which ultimately disrupts the company's operations. This problem is influenced by several key interrelated factors.

1. Lack of operational staff

Solution 1 :

a) Increase in the number and quality of operational staff
b) Increasing the number of operational staff can ensure that all tasks can be handled properly.

Solution 2:

a) Share the workload with other teams
b) Divide the workload with other teams that have the capacity to assist in oil warehouse activities, so that the workload does not pile up on one team alone

2. Manual Tank Warehouse Supervision

Solution 1 :

a) Updating technology and automation in oil tanks
b) Creating new technologies for automation in the supervision process so that the process becomes more efficient and accurate.

Solution 2 :

a) Changing the surveillance system
b) Redesign existing surveillance systems to improve efficiency and accuracy in monitoring oil inventories.

3. Less effective supply of cooking oil raw materials

Solution 1 :

a) Re-planning cooking oil shipments
b) Evaluate and re-plan delivery schedules and routes to ensure raw materials arrive on time and in the right conditions.

Solution 2 :

a) Increase the capacity of the reserve tank
b) Increasing reserve storage capacity to reduce the risk of running out of stock and ensure a more stable supply.

Table 1. Solution Design

It	Solution Design
1.	Increase in the number and quality of operational staff
2.	Sharing the workload with other teams for oil warehouse activities
3.	Updating oil tanked technology and automation
4.	Changing the surveillance system
5.	Re-planning cooking oil shipments
6.	Increase the capacity of the reserve tank

Source: Processed Data of the Author 2024

Table 2. 5W+1H Analysis, Inventory Planning in Oil Tank Warehouses

What	Who	Where	When	Why	How
Lack of operational staff	Staff Warehouse	PT tank warehouse Indofood		Excessive workload	Recruiting Additional operational staff
Manual Tank Warehouse Supervision	Spare Parts Technician Warehouse	PT Tank Warehouse Indofood		No automation tools	Implement an automated monitoring system and train staff to use the new system
Delivery planning of cooking oil raw materials is less effective	PPIC, Supplier	Supply chain			Changing the planning of the delivery route, Monitoring and adjusting the plan periodically and the initial planning of the arrival of 2 trontons in a day, so

					3 trontons in a day with a capacity of 20 tons 1 tronton.

Source: Processed Data of the Author 2024

B. Do Stage

This stage carried out improvement actions in planning cooking oil inventory in tank warehouses which were developed based on the results of the 5W+1H analysis that has been carried out there are 3 problems which include (a) lack of operational staff, then the improvement actions carried out by recruiting additional operational staff so as to reduce excessive workload in one operational staff only, increasing operational efficiency. (b) Tank Supervision which is still manual, then the improvement action is carried out by implementing an automated monitoring system so that it can be more realistic in recording as well and can anticipate the occurrence of oil spills when supplying to production so that the inventory remains in the tank warehouse. (c) the planning of the delivery of cooking oil has not been effective, then the corrective actions taken by making a plan for the delivery route,

C. Checking Results (Check Stage)

Stage 3 checks by evaluating the implementation of inventory planning improvement activities that have been carried out in the previous stage and analyzing whether the improvement actions have gone well or need to be further adjusted The control stage is a phase where the comparison of the results of the improvement stage with planning objectives is carried out to ensure existing differences (Chandrakanth, 2016). After the control stage is completed and all aspects are in accordance with the set standards and the goals to be achieved, the next step is to move on to the action stage. At this stage, the focus is no longer on improvement, but on new innovations, such as the development of new standards.

D. ACTION (ACT)

Today, the focus is no longer on improvements, but on new innovations and the creation of new standards. For example, actions taken:

1) Standardization and Monitoring of Results: Standardize to maintain the results of improvements that have been made. Continuous supervision is required to ensure the continuity of repairs.
2) Determine Next Improvements: Based on the results of the evaluation, identify areas that still need further improvement or areas that can be improved. Plan for further improvement steps to improve the effectiveness and efficiency of cooking oil inventory planning in tank warehouses.

So based on the research that has been carried out regarding the analysis of cooking oil supply planning in tank warehouses at PT Indofood CBP Sukses Makmur Tbk Noodle Division Semarang Branch, the researcher provides proposals in the cooking oil supply process from tank warehouses to production so that the oil supply process becomes more effective.

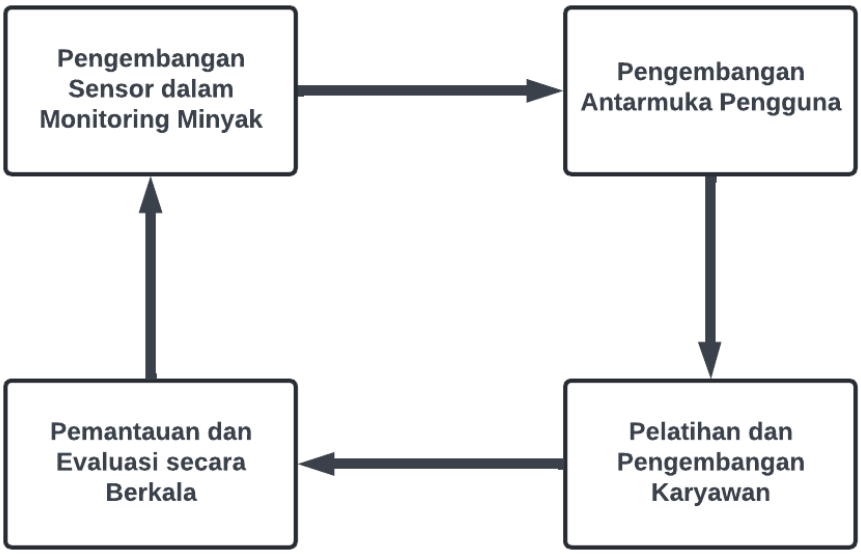

Figure 3 Flow Chart of Research Output
Source : Author Processed Data 2024

1. Development of Oil Monitoring Sensor System

In the development of oil monitoring sensors, it will help in the process of supplying oil to production tanks to be more effective. Where later the sensor will work by providing a signal when the oil surface is at a certain limit that is determined so that it

can minimize oil spills that occur during the supply process. The use of this system will make it easier for workers to monitor and supply oil to the tank.

2. User Interface Development

The development of user interfaces is useful to help interaction between workers and existing systems. With the user interface, workers can determine the quantity of cooking oil needed during the cooking oil supply process or workers can stop the cooking oil supply process if there are unexpected things during the supply process. This user interface can be an application that is operated through a special Company computer device to monitor cooking oil.

3. Employee Training and Development

Invest in employee training and development to improve their skills in managing warehouses, including security, maintenance, and handling of goods. Training and development help employees improve their skills and abilities on the job. It includes technical knowledge, interpersonal skills, time management, and more, which can help employees become more effective in their tasks. Employees who have better skills and knowledge tend to be more productive in their jobs.

4. Regular Monitoring and Evaluation

The most important step in this process is periodic monitoring and evaluation, helping in identifying problems or obstacles that may arise in the development of cooking oil monitoring by using sensors that will be carried out periodically to produce a system that works properly.

CONCLUSION

Based on the results of research that has been carried out in the cooking oil supply tank warehouse located in Tambak Aji Ngaliyan owned by PT Indofood CBP Sukses Makmur Tbk, Noodle Division, Semarang Branch. The conclusions of this study are:

1. Cooking oil inventory planning located at PT Indofood CBP Sukses Makmur Tbk Noodle Division Semarang Branch there are several things that need to be improved to improve cooking oil inventory planning in tank warehouses such as the quality and quantity of operational staff, technology used, systems used that are still ineffective, to the need for adjustments to

the quantity of supply tanks and production that can achieve better planning and ensuring optimal inventory availability and supporting the smooth operation and productivity of the company.

2. There are several obstacles that affect Cooking Oil Inventory Planning in PT Indofood's tank warehouses, including the lack of operational staff who supervise the inventory tank warehouse area, manual supervision and monitoring using human labor that is prone to errors and cause oil spills during the oil supply process to production, and the lack of effective flow of planning for the delivery of raw materials to PT Indofood. These obstacles lead to the ineffectiveness of the expected planning

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