

ABSTRACT

In the industrial world, effectiveness and efficiency can be seen from several factors, such as: resource utilization, facilities, costs, or management systems. Every company must always want to meet the needs of its consumers well, so that every industrial business will always have a reserve of inventory for the products it sells in the future. CV Citra Tani is one of the official retailers of Pupuk Indonesia in West Pasaman Regency, precisely in West Sumatra Province, which distributes non-subsidized fertilizers to farmers. In addition to managing non-subsidized fertilizers, CV Citra Tani is also a warehouse provider for subsidized fertilizers managed by other retailers. CV Citra Tani is located in a district/village area that is directly selected by the distributor. CV Citra Tani manages 15 types of non-subsidized fertilizers, namely Urea Pusri, Urea PIN, Phosgro, NPK Bash, NPK Phonska Plus, NPK Special, NPK 3NG Yara, NPK PIN, NPK Grower, TSP China, KCL, Organik Arena, Delonix, Petroganik, and ZA Mahkota. The entire availability of this fertilizer is stored in 2 units of stall warehouses owned by CV Citra Tani which has an area of 240 m².

All types of fertilizers managed by CV Citra Tani come from the same distributor and product orders are made jointly according to the distributor's policy. In addition, the distributor also has a minimum number of orders per each season. The first season is from January to April, the second season is from May to August, and the third planting season is in the last 4 months, September to December. The agreed minimum order amount depends on the sales history of that period.

The high ratio of inventory and demand ratio is a problem faced by CV Citra Tani in controlling the supply of non-subsidized fertilizers, this happens because the amount of inventory owned is greater than the amount of sales generated. As a result of the imbalance between inventory and sales, each type of fertilizer experiences excess inventory which results in a lot of stock being stored and has an impact on the total inventory cost which exceeds the actual budget by 19% or around Rp956,920,471.

This final project will solve the problem by designing an optimal nonsubsidized fertilizer inventory policy so as to minimize the total inventory cost. The method used in this final project, namely the periodic joint replenishment method, aims to manage the inventory of a group of products that can be ordered simultaneously from one supplier. In the calculation of periodic joint replenishment using lead time data, major message costs, minor message costs, demand data and storage costs. The integrated system design method used will result in total inventory costs and inventory policy components including time between orders, maximum inventory levels, safety reserves and total inventory costs. The resulting total inventory cost will be compared with the total cost in the existing conditions.

The results of the research calculation using the periodic joint replenishment model resulted in a total inventory cost of Rp. 4,702,714,724. So it can be said that this final project provides savings of Rp1,251,019,276 or 21% of the total existing inventory cost and a decrease of 6% from the actual budget target. In addition, this study also conducted forecasting with the aim of knowing the value of demand in the next period in order to anticipate overstock again. From the results of this Periodic Joint Replenishment policy, the solution offered by the author can help CV Citra Tani as an official retailer to overcome the problem of overstock of non-subsidized products managed.

Keywords: Non-subsidized Fertilizer, Overstock, Periodic Joint Replenishment