

ABSTRACT

PT. Herlina Cipta Pratama is a company engaged in the food industry, where produced in a variety of dodol picnic brands with special flavor. The company currently does not have rules of calculation in determining the quantity and the time of ordering raw materials to suppliers, so companies often have excess raw materials that have an impact on the high total cost of inventory.

By looking at the raw material's demand characteristics of companies that are bound and dynamic things that can be done by the company is the application of *Material Requirement Planning* (MRP) by the method of *Dynamic Lot Sizing*. The MRP system is capable of planning and inventory control with respect to the relationship between constituent components in accordance with the structure of the products owned, so that all production needs are met appropriately and optimal inventory levels and the minimum total inventory cost. In calculating the quantity of lotting, performed using the method *Lot For Lot* (LFL), *Fixed Order Quantity* (FOQ) and *Wagner Within Algorithm* (WWA) is selected according to the characteristics of each raw material and produce a minimum total inventory cost.

All stages in this method, performed using an application that has been designed as a tool to simplify the calculations and provide information quickly to decision-making process with the raw materials requirements planning has several other functions. From counting result, this proposed method can minimize the total inventory cost for Rp3.879.665 or 39.27% from the calculation of the raw materials requirements planning existences company.

Therefore, *Material Requirement Planning* (MRP) with *Dynamic Lot Sizing* application can be used by companies for quantity, time and inventory costs problems, thus reducing the excess raw materials that occur, ensuring the smooth production and improve productivity and profitability.

Keywords: *Material Requirement Planning* (MRP), *Dynamic Lot Sizing*, *Lot For Lot* (LFL), *Fixed Order Quantity* (FOQ), *Wagner Within Algorithm* (WWA).