

***Analysis of Soybean Raw Material Inventory Control Using the
Economic Order Quantity Method***

(Case Study: Rumah Tempe Pak Pon)

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ABSTRACT

Rumah Tempe Pak Pon was a home based business engaged in tempeh production located in Sidoarjo Regency, East Java. This study aimed to analyze the raw material inventory control system for soybeans by applying the Economic Order Quantity (EOQ) method and to compare the inventory costs between the conventional method and EOQ. EOQ is a calculation method used to determine the most optimal order quantity for raw materials by considering annual demand, ordering costs, and holding costs, thereby enabling more efficient inventory management. The results showed that the EOQ method generated an optimal order quantity of 379 kg per order, with an ordering frequency of 40 times per year. The reorder point was set at 238 kg, with a safety stock of 180 kg. The total inventory cost using the EOQ method amounted to Rp 910,198, which was significantly lower than the conventional method's cost of Rp 2,998,200. The use of the EOQ method resulted in a cost efficiency of Rp 2,088,002 or approximately 69.64%. These findings indicated that EOQ was more effective in determining the right order quantity and reducing the frequency of orders, thereby minimizing costs and lowering the risk of raw material shortages.

Keywords: *Soybeans, Inventory, Raw Materials, EOQ, Rumah Tempe Pak Pon*