

Analysis of Soybean Raw Material Inventory Control at UD Tempe Mendoan Sahabat Cilacap in Tangerang

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ABSTRACT

This study aims to analyze the inventory control of soybean raw materials at UD Tempe Mendoan Sahabat Cilacap by comparing conventional methods, Economic Order Quantity (EOQ), and Just In Time (JIT). The study uses a descriptive quantitative approach by utilizing data on raw material requirements, ordering costs, and storage costs over a one-year period. The analysis is carried out through the calculation of the economic order quantity, ordering frequency, Safety Stock, Reorder Point (ROP), and Total Inventory Cost (TIC). The results show that the conventional method produces a TIC of Rp967,517,50 with an ordering frequency of 87 times per year, so it is not optimal in controlling inventory costs. The application of the EOQ method produces an economic order quantity of 681.07 kg with a frequency of 13 times per year, Safety Stock of 88 kg, Reorder Point of 112 kg, and TIC of Rp278,118,05 or is able to save inventory costs by 71.3% compared to the conventional method. Meanwhile, the JIT method resulted in an order frequency of six times per year with an order quantity of 1,523 kg, five optimal deliveries for each order, and a TIC of Rp124,378,17, or a savings of 87.1%. Based on the comparison results, the JIT method is the most efficient method because it produces the lowest inventory costs and is suitable for the company's operational conditions, supported by short lead times and closeness to suppliers.

Keywords: *Inventory Control, Economic Order Quantity, Just In Time, Total Inventory Cost, Soybean Raw Materials*

Analisis Pengendalian Persediaan Bahan Baku Kedelai Pada UD Tempe Mendoan Sahabat Cilacap di Tangerang

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ABSTRAK

Penelitian ini bertujuan untuk menganalisis pengendalian persediaan bahan baku kedelai pada UD Tempe Mendoan Sahabat Cilacap dengan membandingkan metode konvensional, *Economic Order Quantity* (EOQ), dan *Just In Time* (JIT). Penelitian menggunakan pendekatan kuantitatif deskriptif dengan memanfaatkan data kebutuhan bahan baku, biaya pemesanan, dan biaya penyimpanan selama periode satu tahun. Analisis dilakukan melalui perhitungan jumlah pemesanan ekonomis, frekuensi pemesanan, *Safety Stock*, *Reorder Point* (ROP), serta *Total Inventory Cost* (TIC). Hasil penelitian menunjukkan bahwa metode konvensional menghasilkan TIC sebesar Rp967.517,50 dengan frekuensi pemesanan 87 kali per tahun, sehingga belum optimal dalam mengendalikan biaya persediaan. Penerapan metode EOQ menghasilkan jumlah pemesanan ekonomis sebesar 681,07 kg dengan frekuensi 13 kali per tahun, *Safety Stock* 88 kg, *Reorder Point* 112 kg, dan TIC sebesar Rp278.118,05 atau mampu menghemat biaya persediaan sebesar 71,3% dibandingkan metode konvensional. Sementara itu, metode JIT menghasilkan frekuensi pemesanan 6 kali per tahun dengan jumlah pemesanan 1.523 kg, lima kali pengiriman optimal pada setiap pemesanan, serta TIC sebesar Rp124.378,17 atau penghematan sebesar 87,1%. Berdasarkan hasil perbandingan, metode JIT merupakan metode yang paling efisien karena menghasilkan biaya persediaan terendah serta sesuai dengan kondisi operasional perusahaan yang didukung *lead time* singkat dan kedekatan dengan pemasok.

Kata Kunci: Pengendalian Persediaan, *Economic Order Quantity*, *Just In Time*, *Total Inventory Cost*, Bahan Baku Kedelai