

RINGKASAN

Pohon kelapa dikenal sebagai “pohon kehidupan” dan digunakan untuk makanan serta produk industri. Salah satu produk yang dihasilkan dari pohon kelapa adalah gula kelapa. PT BPI adalah perusahaan yang mengekspor gula kelapa organik ke pasar Eropa, khususnya Polandia. Perusahaan memiliki tantangan dalam mengelola pasokan bahan baku akibat fluktuasi permintaan. Fluktuasi permintaan dapat menyebabkan kelebihan atau kekurangan persediaan sehingga berdampak pada produksi dan meningkatkan biaya penyimpanan. PT BPI belum mengoptimalkan sistem pengendalian bahan baku hal tersebut mengakibatkan keterlambatan pengiriman produk. Perencanaan dan pengendalian bahan baku yang efektif sangat penting untuk mengatasi permasalahan tersebut. MRP membantu dalam merencanakan jadwal produksi dan menentukan jumlah serta waktu pembelian bahan baku.

Penelitian ini bertujuan untuk (1) Mengidentifikasi perencanaan dan pengendalian bahan baku di PT BPI (2) Menganalisis penerapan MRP menggunakan pendekatan *Lot For Lot* (LFL), *Economic Order Quantity* (EOQ), dan *Periodic Order Quantity* (POQ) di PT BPI (3) Menentukan alternatif metode yang dapat diterapkan di PT BPI dalam perencanaan dan pengendalian bahan baku. Penelitian dilaksanakan di PT Berkas Petani Indonesia pada bulan Mei-September 2025. Rancangan pengambilan *sample* menggunakan *purposive sampling* yaitu menggunakan informan kunci. Informan kunci dalam penelitian ini meliputi Direktur Operasional, Kepala *Internal Control System* (ICS), Kepala produksi & gudang, Kepala *sales marketing*, dan Petani pengepul. Metode pengumpulan data menggunakan teknik wawancara, observasi, dan dokumentasi. Analisis dilakukan dengan membuat jadwal induk produksi, daftar bahan baku, data persediaan hingga perhitungan MRP metode *Lot For Lot* (LFL), *Economic Order Quantity* (EOQ), dan *Periodic Order Quantity* (POQ).

Hasil penelitian menunjukan bahwa PT BPI menerapkan metode FIFO (*First In First Out*) dalam penerapan manajemen persediaan. FIFO bertujuan untuk memastikan bahwa produk yang pertama diterima adalah yang pertama dijual, sehingga meminimalkan kerusakan. PT BPI melakukan penyesuaian metode FIFO dengan berdasarkan ketersediaan kapal pengiriman dan pesanan pelanggan. Perbandingan MRP dengan teknik *lotting* LFL, EOQ, dan POQ menunjukan bahwa metode LFL menghasilkan total biaya terendah dibandingkan dengan metode EOQ dan POQ. Alternatif metode yang dapat diterapkan di PT dalam perencanaan dan pengendalian bahan baku metode MRP dengan teknik LFL. Penerapan metode LFL selama periode Mei-November 2025 mampu menghemat biaya sebesar Rp84.554,287 atau sekitar 46,84% dibandingkan dengan perhitungan yang diterapkan oleh perusahaan.

SUMMARY

The coconut tree was known as the “tree of life” and used for food and industrial products. One of the produced from coconut trees is coconut sugar. PT BPI was a company that exported organic coconut sugar to the European market, particularly Poland. The company faced challenges in managing its raw material supply due to fluctuations in demand. Fluctuations in demand could lead to excess or shortage of supply, which affected production and increased storage costs. PT BPI had not optimized its raw material control system, resulting in product delivery delays. Effective raw material planning and control were essential to overcome these problems. MRP helped in planning production schedules and determining the quantity and timing of raw material purchases.

This study aimed to (1) identify raw material planning and control at PT BPI, (2) analyze the application of MRP using the lot-for-lot (LFL), economic order quantity (EOQ), and periodic order quantity (POQ) approaches at PT BPI, and (3) Determine alternative methods that could be applied at PT BPI in raw material planning and control. The researched conducted at PT Berkas Petani Indonesia in May-September 2025. The sample collection design used purposive sampling, namely used key informants. Key informants in this study included the Director of Operations, Headed of Internal Control System (ICS), Headed of production & warehouse, Headed of Sales Marketing, and Farmer collectors. Data collection methods used interviews, observation, and documentation techniques. Analysis carried out by created a master production schedule, a listed of raw materials, inventory data, and MRP calculations used the Lot For Lot (LFL), Economic Ordered Quantity (EOQ), and Periodic Order Quantity (POQ) methods.

The results of the study showed that PT BPI applied the FIFO (First In First Out) method in inventory management. FIFO aimed to ensure that the first products received were the first to be sold, thereby minimizing damage. PT BPI adjusted the FIFO method based on the availability of shipping vessels and customer orders. A comparison of MRP with the LFL, EOQ, and POQ lot techniques showed that the LFL method produced the lowest total cost compared to the EOQ and POQ methods. Alternative methods that could have applied in PT in planning and controlling raw materials was the MRP method with the LFL technique. The application of the LFL method during the period of May-November 2025 was able to saved costed of Rp84,554,287 or around 46.84% compared to the calculations applied by the company.