

ABSTRACT
***IMPLEMENTATION OF CONTAINER LOADING PROBLEM
TO MINIMIZE UNLOADING TIME IN THE DISTRIBUTION OF
DRINK PRODUCTS
USING TABU SEARCH ALGORITHM***

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PT. XYZ is a company that produces beverages with various types and sizes. The product distribution process started from the product in plant transported to sales offices and then distributed to retailers. One of the problem faced by the company is the low achievement of delivery targets, which is 68% or 17 shipment of 25 shipping target. There are unloading activity that takes time up to 28% of the total distribution process. There is no scientific method used by company to stack the products in container that cause the exclusion of unnecessary items in the unloading process. Searching and unloading process takes 63% of the total unloading process. The rearrangement of the product into the container accounts for 25% of the total of unloading time, which is included in non value added activities that should be eliminated.

This research proposed product stacking by using tabu search algorithm as a solution of container loading problem by considering LIFO policy to decrease the search process and elimintae the restack process.

Implementation of tabu search algorithm with considering LIFO policy in this research could eliminate the restack process and achieve optimization in unloading time by 33.36 minutes or about 32% of the total unloading time. Therefore, it can increase achievement of total delivery target up to 72% or about 18 shipments.

Keywords: Container loading problem, tabu search algorithm, drink product, LIFO, unloading time