

ABSTRACT

Batch scheduling is one of important planning of production activities at PT. Alenatex engaged in manufacturing textile which produces 12 types of fabrics. However, not all of the production processes have the same process time as well as in the dyeing. Dyeing process has varying process time in every type of fabric. So it is quite difficult to do the batch scheduling optimally, where the company only determines batch sizes in accordance with the capacity of the engines. The company also suffered overstock which is about 1360 units per month.

Dependent processing time is a condition in which the process time per unit is no longer fixed, thus it can affect the batch actual flow time. The processing time per unit in a batch is affected by the long waiting time from the completion of the batch until the time of delivery. From the research results obtained by the actual flow time total minimum is 1672726.54878 at $N = 14$.

With dependent processing time, the company can minimize the actual flow time from 9966381.36130931 into 1672726.54878 unit time. This case results in a decline of as much as 83.216%. Meanwhile, the amount of production on dyeing machines decreased from 1921 units to 1133 units per month. Then the company can also reduce the makespan of 74 018%.

This research resulted a batch scheduling of batch size, batch sequence, and the number of batches which can help company reduces overstock or any delay in delivery to the consumers.

Key words : dependent processing time, batch scheduling, and actual flow time