OPTIMIZATION OF AGGREGATE PRODUCTION PLANNING WITH MULTIPLE-OBJEKTIF – PRE-EMPTIVE GOAL PROGRAMMING IN PACKAGING PRODUCTION SYSTEM AT PT. CRS

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ABSTRACT

PT. CRS is a manufacturing company that moving in packaging printing sector with product like multi-layer packaging. Raw materials at PT. CRS are supplied by just one supplier with 3 month lead time. This condition often cause an inventory problem such as shortage and waste resulting that the company cannot fulfill its demand target, production cost target, and inventory target. In the other side, the company objective to maximize the machine utility is conflicting with the environmental issue to minimize the energy consumption. Therefore, in order to optimize the production planning at PT. CRS so that all of the company objectives are fulfilled then a research should be done.

In order to optimize the production planning based on the company objectives, the production process is modeled in mathematical shape using Pre-Emptive Goal Programming method. With this method it is desireable that the company could arrange its production planning more accurate and optimum so that every objectives could be fulfilled in appropriate with the existing restriction in production process.

The optimization result shows that the mathematic models can represent the production system in the company with almost every objectives can be fulfilled. Demand targets are fulfilled 100% except in October 2010 period because the lack of raw materials. Economising of waste cost resulting production cost targets achievement more than 100% in average, meanwhile the inventory target just fulfilled approximately between 80% to 90% because the forecasting demand error. The fulfillment of machine utility and energy consumption targets almost 100% for both of the objectives except in August 2010 period, the machine utility is low because the lack of order that company received.

Key words: inventory, objective, conflicting, optimization, pre-emptive goal programming.