APPLYING FUZZY GOAL PROGRAMMING TO OPTIMIZE AGGREGATE PRODUCTION PLANNING IN CUTLERY INDUSTRY
(CASE STUDY: PT. DWI PERKASA JAYA)

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ABSTRACT

Aggregate production planning (APP) is one of the most important functions in production and operations management. Aggregate production planning deals with matching production capacity to various demand from customer order over the medium term, often from 3 – 18 months in advance. Various methods and models of APP have been proposed to solve any APP’s problems. Conventional models of APP which is used is only can optimize single objective of minimizing total production cost over the certain planning period and with assumptions, the parameters (cost and demands) and targets (goals) are deterministic.

This research applied fuzzy goal programming model to optimize multi – product APP in a cutlery industry in a fuzzy environment where the goals are imprecise. The proposed model attempts to minimize total production cost, total inventory cost, and total turn over worker. The planning horizon used is between Januari 2012 – Juni 2012.

The results of this research shows APP model with fuzzy goal programming gives better solution at certain goal, which are: total production cost is Rp 217,616,100 (on target 240,000,000), total inventory cost is Rp 16,023,570 (on target Rp 18,000,000), and total rates of changes (turn over) worker is −7465,240 (jam - orang) (off target 0 jam – orang). The Degree of achievement (L) is 0.5400205.

Keywords: Aggregate production planning, Multiobjective decision making, Fuzzy goal programming.