

**STOCK PRODUCTION OPTIMIZATION SYSTEM EGGTRAY  
USING GENETIC ALGORITHM  
(CASE STUDY: PT. SINAR ERA BOX GRESIK)**

**ABSTRACT**

Inventories are important for the company to run the business process to be effective and efficient in accordance with the objectives to be achieved. One example is the supply of goods in the production eggtray for companies PT. Sinar Era Box. Needs eggtray begin to increase along with the development of industrial packing. In order to provide sufficient supplies required are met. With a good inventory system, a company will get optimum benefit. It is seen from the success or failure of supply planning in the production of goods. Many least supply will affect the costs to be incurred by the company. Genetic algorithm optimization applied in the case of goods to get the maximum benefit of inventory cost savings. Optimization of inventory using the technique of one-cut point crossover, mutation by mutation exchange and selection using elitism selection. In this study, there were eight chromosomes as the data amount of inventory represented using representation. real-coded the length of the chromosome is a company producing total time eggtray in units of weeks. The optimal solution is derived from the size of a population of 10, the combination of crossover rate and mutation rate is 0.5 and 0.5, the number of generations as much as 10 who earned an average of value fitness the high estis 0.0325.

**Keywords:** *Genetic Algorithm (GA), Inventory Optimization, Cost, Industrial Packing Eggtray.*