ABSTRACT

The effectively and efficiently of fertilizer distribution pattern will be minimizing transport cost. Distribution of fertilizer production to the all supplier in the all indonesia islands mostly using ship. The role of ship is to supporting the distribution of fertilizer being important. Nowadays, chartered ship be the main priority as a tool of distribution, that made the dependency of ship become overpowering. Domination of fleet ships to deriving the fleet compositions as a charter ship and own ships become consideration of the fertilizer producer to minimizing the cost transportation.

In this final project will be studied a model of domination fleet ships in the PT. Petrokimia Gresik to supply the need of fertilization with minimum cost to the all places in Indonesia exclude Java and Bali island. With using solver as a tool to build the optimum composition model of the fleet ships. Solver as an application of simplex methode which is the objective function to minimizing cost of transportation from the origin producer in Gresik to the 23 port destination in the all indonesia island. Constraint of this model are the cargoes which distributed must be greater or same with the needed of fertilization and also the frequency of shipping must be positive integers.

The result of this optimization indicating that the using of combination model which is divided destination ports into some areas can distribute 717,706 tonnes fertilizer in one year. According this model combination then the minimum cost of transportation is 61.9% cargo transported using own ship dan 23% by chater ship whereas 15.1 % cargoes transported by voyage charter ship with takes cost achieved Rp 88,565,250,528 which the decline in the cost of 18.8 % from the existing cost transportation.

Keywords: model, ability, fleet, petrokimia