ABSTRACT

Transportation is an activity to move goods from one point to one goal or more. One company that has great influence in terms of the expenditure of transportation is PT. Sumber Alfaria Trijaya, which is one of self-service franchise company that sells consumer goods in retail stores, Alfamart. Average of activity cost in this transportation increased by 10% each year of the last 3 years. Scheduling are difficult to do, because the demand is different for each outlet and with different mileage. Transportation problems in PT.Sumber Alfaria Trijaya have characteristics VRP Multiple Product and compartments, Multi Trips, and Periodic.

Tabu Search is one of metaheuristic method that can be used to find the optimal solution of the transportation route in PT. Sumber Alfaria Trijaya. Based on Tabu Search method which has several stages of searches, that is the initialization parameter, checks and demand attributes, calculate a new route distance, determines the current solution, set a route to generate a route with a better total distance, and the latter is to determine the best solution. The determination method of grouping was done after the allocation of demand with ABC method.

Determination of the transportation route with Tabu Search method produces a distance minimization of the number of 12852 km to 11087 km, minimization of the transport vehicle 80 pieces to 59 pieces, minimizing staff from 92 people to 69 people, and of course minimize the total cost of transportation of Rp.1.034.470.000 to Rp.796.475.000 with percentage of decrease cost is 23.01%

Key Words : Transportation, Vehicle Routing Problem, Tabu Search.