

ABSTRACT

KPBS Pangalengan is one of the largest Dairy Farmers Cooperative in Indonesia are located in Bandung regency. One of these cooperative activities are manufacturing and distributing animal feed rations, namely Ransum Concentrate (RC). The amount of costs incurred due to the current distribution of the RC makes KPBS Pangalengan need to move plants in Cirebon to an area which closer to distribution points. In addition a new distribution route of RC need to be designed that appropriate with the amount of vehicle needed and the vehicles carrying capacity so that the distribution activity to be optimal and the RC distribution costs can be minimized.

The answer of this issue carried out by two methods. The first method is the analytical hierarchy process (AHP) is used to determine the location of the proposed plant, this method is the technique of decision making that incorporate multiple criteria that are both real (tangible), unreal (intangible), quantitative and qualitative that takes into account also the existence of conflict or differences of opinion. The second method is solving problems to get the optimal route determination applied by genetic algorithm.

The result is that the alternatives are chosen as the location of the plant relocation is Bojong Sereh with an area of land and buildings \pm 5000m², and the price of building is Rp 3.300.000. While the determination of the distribution route successfully deliver the output of the optimal route. The result of estimated cost show in October Rp 55.439.060,96 and November is about Rp 54.662.761,30 with the number of vehicles used in October is 210 and 209 vehicles in November.

Keyword: analytical hierarchy process, genetic algorithm, TPK, location, route