

## **ABSTRACT**

*PT. Agronesia Inkaba Rubber Engineering Business Division is a company in the field of rubber. Existing condition of floating hose production floor have not had an efficient facility layout. It can be seen from a long distance moving between successive operations. This layout inefficiencies caused large material handling activities. Also on the open mill machine 1, the operator has not worked based on ergonomics principles because of machine is higher than the operator. Therefore it is needed to design facility layout using craft algorithm and ergonomics principle in order to overcome this inefficiencies problems.*

*Improved design of facility layout is done by software WinQSB using craft algorithm, with criteria to minimize the material handling activities, it can be see from the moment of movement. To overcome the conditions that have not fit with ergonomics principles, calculation with percentile. Calculation is done to calculate tool board dimensions in order to make the operator works based on ergonomics principles.*

*Through this research, the more efficient facility layout is obtained, it can be seen from the moment of movement is reduced to 50.5% in the proposed layout. This is when projected on the statement Tompkins and White (1996) that 20-50% of the total cost of manufacturing operations that's got from material handling costs, then the layout of this proposal will save about 10-25% of the manufacturing cost each month. Also acquired the dimensions of the tool is ground board height 10 cm, 29 cm wide and 5.7m long with 95-th percentile.*

*For the next research, the production chain should be simulated, in order to get more accurate result and it has to consider the cost factor, for to know the layout changing total cost.*

**Keywords :** *Layout, CRAFT algorithm, ergonomics*