

ABSTRAC

The Polyface Nambo community processes citronella and ginger into plant oil using a distillation process. In the production process, the yield obtained is 0.4%, so it is considered less than optimal. Therefore, the Polyface Nambo Community changed the method to supercritical fluorocarbon solvent extraction which produces oleoresin to increase yields to minimize material handling costs. As result of changes in the method made to increase the yield value, it causes changes in the production process. Process changes that occur resulted in the need for a new layout. The design of the new layout requires the arrangement of the layout of the facilities aimed at more effective use of space. Utilization of space is done by arranging and arranging machines so that the distance between the facilities is minimal. Minimizing the distance that is done affects the cost of material handling which is used as an indicator of the result of the design decision. Based on the existing problems, the methods used are automated layout design (ALDEP) and computerized relative allocation of facilities (CRAFT). The ALDEP method is a construction method that considers the close relationship between facilities and the CRAFT method is a method that considers material handling costs. Both methods meet the needs of the research with the result selected based on minimal material handling costs to produce the best results. Based on the ALDEP method, the alternative chosen is the alternative with the TCR value, not the highest but the lowest material handling costs with a TCR value of 416 and material handling costs of Rp242.271. Based on the alternative CRAFT method chosen is iteration 0 with material handling costs of Rp197,879. The result taken based on the lowest material handling cost is the CRAFT method with a price of Rp197,879. The material handling costs obtained are added to the material handling costs of the extraction area and the costs are separated based on the type of raw material processed. Thus, the material handling costs obtained for ginger raw materials are Rp169,394 and lemongrass raw materials are Rp 96.613.

Key word — Facility layout design, Automated layout design (ALDEP), Computerized relative allocation of facilities (CRAFT), material handling cost.