

ABSTRACT

Design improvement with an axiomatic design approach are often used for improvements to manufacturing systems, production lines, redesign, and more. As an object of research, PT. Perkebunan Nusantara VIII found problems in the process of moving the milled tea-leaves using material handling equipment, which used trolley with a height about 58cm, moving the loaded from the OTR (open top roller) machine to the conveyor that the height is 78cm. Based on the calculation of RULA, obtained RULA value that is 7 units of workload, which it is an action level 4 indicating that this condition is dangerous, then checking and improvement are needed immediately. In functionality aspect, the height of the trolley is considered to be less supportive of the moving process because it slows down the process. Therefore, it is necessary to improve the design of the tea leaf carrier tool so as to adjust the user's needs. These design improvements can be helped by using an axiomatic design approach. This approach is used to analyzes the functionality requirements summarized in the Functional Requirements (FR) and the solutions achieved to satisfy them are summarized in Design Parameters (DP), also analyze user requirements, determine solutions to meet user needs, and create and select and optimize proposed solutions. The results of this improvement provide a concept that could improve the functional trolleys to adjust for both of machines. Based on the calculation of RULA from the proposed design concept, the value obtained for 4 units of work load, where these values fall into the safe category.

Key words : Redesign, Axiomatic Design, Material Handling