

ABSTRACT

Frying using sand as a substitute for oil has several advantages such as easy to rancidity, sand has a large thermal contact value, readily available and cheap, the products are fried (crackers) easily reconditioned. In Indonesia, frying using sand has been applied in some areas cracker industry, such as UKM Kerupuk Mares, Waru, Cirebon. There are 10 people of craftsmen frying chips with an age range 40-65 years. One of the tools in use today is manually operated, has a dimension of length x width x height 94,8 x 91,2 x 74,13 cm.

The main activity when operating the fryer is when the operator turning the handle. Based on the observation that activity has characteristics that can lead to awkward postures Musculoskeletal Disorders. Observation is supported by the results of interviews with craftsmen, they feel discomfort when using the machine. The results of observation was quantified by RULA analysis to determine the risk of MSDs. Value of the result is 7. Based on the level of these risks and impacts will MSDs it is necessary to redesign the frying machine to reduce the risk of MSDs on the operator.

Redesign frying machine performed using reverse engineering and redesign methods approaches. In this study, element of comfort and health of operators is considered to determine the attributes of the product and the target product specifications, so that the outcome is expected to be design improvements sand medium cracker frying machine adjusted to the size of anthropometric data to meet comfortable and has lower RULA value that can reduce the risk of MSDs to meet the health aspect.

Keywords: sand medium cracker frying machine, musculoskeletal disorders, RULA, reverse engineering and redesign methodology, product development.