

## ***ABSTRACT***

*Indonesia is a country that has the largest natural resources in the world. The results of this natural wealth are used by the community as a substitute for staple food and as a driver of the community's economy. One of these natural products is cassava. The abundance of cassava makes some that have not been consumed or processed become rotten. To prevent cassava from rotting, one of them is by processing and preserving cassava into food called peuyeum. UKM Peuyeum Bandung 1 is the largest peuyeum producer in Cimenyan District with an average production of 7 quintals. However, the peuyeum processing in this UKM is still running manually, one of which is during the fermentation process. The fermentation process is carried out for 5 hours with a position that is not ergonomic. This can cause the risk of Musculoskeletal Disorders (MSDs) in operators.*

*Based on the existing problems, this research was conducted to make a proposed design of peuyeum fermentation aids. Measurement and analysis of the risk of Musculoskeletal Disorders (MSDs) that may occur in the operator's work posture using Rapid Entire Body Assessment (REBA) analysis and using Nordic Body Map (NBM) measurements to determine body part disorders felt by the operator. This research uses the Ergonomic Function Deployment (EFD) method which is a development of the Quality Function Deployment (QFD) method, where this method not only focuses on the needs and desires of users but also on their ergonomic aspects.*

*The result of this research is the design of peuyeum fermentation aids to reduce the risk of Musculoskeletal Disorders (MSDs) in operators. The designed tool has several specifications, such as the type of material used must be strong and food grade, can accommodate 70 kg of cassava, fit in the fermentation work area, and use a motor as a driver. In addition, it also makes a Operating Instructure to ensure the use of tools.*

*After designing the peuyeum fermentation tool, the operator's REBA score was reduced by 40% from the existing work posture, this decrease means that the risk of Musculoskeletal Disorders (MSDs) in peuyeum fermentation operators decreased. This proposed tool is designed based on 50th percentile anthropometric data so that*

*users with medium to high body size can reach and use the tool. In addition, the previous operator had to leaven and contact with 7 quintals of cassava for 5 hours, with the design of the tool the operator does not need to contact with cassava because the tool uses a machine, and the capacity of the tool is 70 kg. It can be concluded that the proposed tool design can reduce the risk of Musculoskeletal Disorders (MSDs) and can minimize the fermentation process time*

**Keywords:** *Ergonomics, Ergonomic Function Deployment, Musculoskeletal Disorders, Fermentation, Design*