

## **ABSTRACT**

*Emping Cassava is a snack from Indonesia in the form of chips made from cassava. Emping is usually produced in the home industry (SMEs). One of the SMSEs that produces cassava chips is the Pos Pelayanan Teknologi Desa (POSYANTEKDES) Ikhlas Ramaku in Rajamandala Kulon Village, Cipatat District, West Bandung Regency. In the cassava chips production process, the cassava chip craftsmen at Mitra Ikhlas Ramaku use a press to carry out the molding or shaping process of previously cut cassava chips dough. The pressing process of cassava dough is repeated (repetitive motion) so that the operator must continue to carry out activities in an inefficient working position. This work position can cause workers to feel sore and allow for injury to workers. These injuries can include muscle-skeletal injuries, namely Musculoskeletal Disorders (MSDs) on the operator. Therefore, it is necessary to analyze the operator's posture when carrying out the process by using several methods to prove the existence of posture errors made by the operator. This analysis uses the Ergonomic Function Deployment (EFD) method with the supporting methods used in this study, namely REBA (Rapid Entire Body Assessment), NBM (Nordic Body Map), and Risk Analysis in the process of pressing cassava chips.*

*The design of this press tool uses an Ergonomic Function Deployment (EFD) approach because this study aims to design a tool that is more ergonomic for the operator and comfortable to use. The form of the tool to be designed is based on the principles of being effective, safe, healthy, comfortable, and efficient (EASNE). The tools produced from the design results in this study are expected to increase productivity. The research process was followed by a process of direct observation and interviews with the relevant resource persons, namely the press tool operator. Analysis using the REBA method is carried out because the operator uses all parts of his body to carry out the pressing process so that the REBA method can be carried out quickly to assess the working posture of the operator's neck, back, arms, wrists, to feet. Meanwhile, the analysis used the NBM method in the form of a questionnaire filled out by the operator in the pressing process to determine the level of discomfort or pain in the body. Then,*

*the Risk Analysis method is used to describe the expected outcome and impact of an event, taking into account the variability in the uncertainty system of an event.*

*After the analysis, the REBA score was 8 and 9, and the highest level of complaints of NBM pain is in the back, right wrist, left knee and right knee with a pressing process time of 10 kg of cassava for 105 minutes with 24 repetitions of the process. The results of the risk analysis show several risk events in the pressing process, one of which is activities in a working position that can cause operator injury caused by operators who perform repetitive motions, so it is necessary to take risk actions by designing a press tool design with the appropriate dimensions anthropometry of an operator. Based on the analysis, the cassava chips pressing process is considered not good. This is proven through REBA analysis, NBM and Risk Analysis which get high scores, so changes still need to be made, with the design of an ergonomic press tool that is expected to be an alternative solution to improve existing conditions. After using the proposed tool design, the proposed tool design has dimensions of 354 x 304 x 872 mm which have been adapted to human anthropometry so that it can meet the ergonomics principles for the operator, with the results of the REBA score is being 3 and 4 , as well as the time required to complete the pressing process for 10 kg of cassava, which is 70 minutes with 16 repetitions of the process.*

*It is hoped that this research can be useful for students as the application of existing knowledge in the field of industrial engineering during lectures to get a solution to the problems that occur, then for the company hopefully it can create a healthy environment for workers, especially in the process of pressing cassava chips dough, as well as for workers. related hopefully with the proposed tool repair, it can ease the work of the operator so as to reduce the risk of fatigue and work accidents.*

***Keywords—REBA, NBM, Risk Analysis, Musculoskeletal Disorders, Ergonomic Function Deployment***