ABSTRACT

The coconut grater machine is an essential tool in household industries and small-scale businesses. However, many existing machines neglect ergonomic aspects, causing operators to experience discomfort or pain in the back, shoulders, arms, and wrists due to improper working posture. This study aims to evaluate working postures on the existing machine using the Rapid Upper Limb Assessment (RULA) method and to design a more ergonomic coconut grater machine to reduce the risk of musculoskeletal disorders. Based on observations and body angle measurements, the existing machine received a RULA score of 7, indicating a high risk of musculoskeletal disorders. The proposed design was developed based on Indonesian adult anthropometric data and ergonomic design principles. Evaluation results show a reduced RULA score of 4, indicating a moderate risk level and improved safety for the operator. Therefore, the redesigned coconut grater machine is expected to enhance operator comfort, occupational safety, and productivity, while minimizing the potential for musculoskeletal injuries.

***Keywords**: Ergonomics, RULA, Coconut Grater, Working Posture, Musculoskeletal, Anthropometry*