ABSTRACT

This study aims to design and analyze the performance of a potato slicing machine with a production capacity of 104 kg/hour, specifically tailored to meet the needs of Micro, Small, and Medium Enterprises (MSMEs). The design methodology includes technical calculations, material selection, and stress analysis of key components. The machine is driven by an electric motor as the primary mover, connected to a planetary gearbox transmission system to produce high torque at a stable rotational speed. The analysis results indicate that the machine is capable of slicing potatoes into consistent stick shapes with a high degree of efficiency. Load and stress calculations on the shaft, frame, and other components confirm that the materials used, particularly *stainless steel*, have sufficient strength to safely withstand operational loads. This machine is expected to be an effective and affordable technological solution for enhancing productivity and operational efficiency in the MSME sector.

Keywords: Machine Design; Potato Slicing Machine; cutting knife.