

***Implementation of Automatic Soy Milk Making Machine to Increase Efficiency
in Production***

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ABSTRACT

This study aims to design and develop an automatic soy milk making machine integrated with a grinding, pulp separation, and stirring system. This innovation is carried out to improve efficiency, quality, and hygiene in the soy milk production process, especially for small and medium enterprises (SMEs). This machine uses two single-phase AC motors as the main drive, one for the grinding process and one for the stirring system. The testing process includes measuring the rotation speed, working time, grinding capacity, and the level of maturity of the soy milk. The test results show that the size of the grinding stone lock affects the level of fineness of the grinding results, where the 2 cm lock produces the highest rotation (2982 RPM) and the finest pulp. The average grinding capacity was recorded at 32.843 kg/hour with an average pulp of 0.435 kg with an extraction yield of 56.5%. In the stirring system, the level of maturity of the material increased over time, reaching 100% in 105 minutes with a stable rotation speed in the range of 73–76 RPM. With an automatic working system and good energy efficiency, this machine is suitable for increasing productivity and quality of processed soy milk sustainably.

Keywords: *Soy milk machine, automatic grinding, pulp separation, stirring, UMKM, production efficiency.*