

DESIGN, FABRICATION AND TESTING OF A MOTORIZED  
COCONUT GRINDING MACHINE

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By

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## ABSTRACT

This study designed, fabricated, and tested the operating of a motorized coconut grinding machine with the intention of providing business owners an access to process their coconut meat such as the ingredients for "baye-baye" production. The principle of the electric-powered machine is to grind the coconut meat using the auger shaft and grinding plate. It has an overall dimensions of 62 cm x 36.5 cm x 60 cm, with major parts including a hopper, grinding chamber, discharge chute, auger shaft and grinding plate, prime mover and pulley system, and frame. Fabrication was done at a machine shop located in Brgy. Purok 4 Pavia, Iloilo on October 2023. Pre-testing and final testing were conducted at the researcher's residence located in Brgy. Ungka 1 Pavia, Iloilo, on November 2023. Performance of the machine as to the input capacity, grinding capacity, grinding recovery, and grinding loss was tested and resulted to these following respective data, 79.90 kg/hr, 76.48 kg/hr, 95.60%, and 4.40%, respectively. The performance of the machine was computed to pass the requirements set by the Philippine Agricultural Engineering Standards. As for the processed product, the moisture content of young coconut meat before and after grinding process is 59% and 66%, respectively. The noise level measured was 81 dB(A) while the operating speed of the electric motor is 420 rpm with a daily consumption of 5.97 kW-hr priced at PHP73.43. The machine has an investment cost of PHP19,000.00 and was computed to have an operating cost of PHP0.87 for every kilogram of coconut meat processed.

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