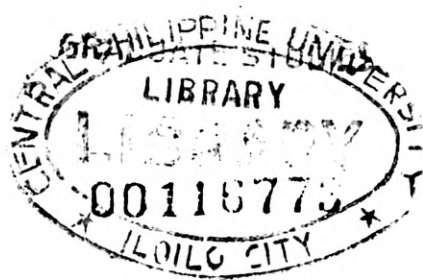


TECHNICAL AND ECONOMIC EVALUATION OF THE DESIGNED  
JACK-DRIVEN BRIQUETTING MACHINE

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# TECHNICAL AND ECONOMIC EVALUATION OF THE JACK-DRIVEN BRIQUETTING MACHINE

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## ABSTRACT

This study was conducted to evaluate the technical and economic performance of the designed briquetting machine that utilizes a hydraulic-type bottle-jack for better compression in producing briquettes. The machine can compact 16 cylindrical (with a hole at the center) briquettes in one pressing or about 200 to 240 pcs/hr. The jack creates the needed pressure by thrusting the molders up to fully compact the materials. With the aid of one spring each on both sides, which jointly holds together the molder and jack flooring supports, the piston of the jack when loosened is pulled back to its normal position allowing a semi-automatic type of operation. The briquettes produced by the machine functioned well as fuel when subjected to cooking and boiling tests indicating its potential as alternative source of energy. This was also highlighted by a higher percentage (81%) of willingness by waste reclaimer-respondents to buy them as fuel for various cooking and heat applications. The production cost per hour for briquettes ranged from about Php32 to Php34 or Php0.13 to Php0.16 per briquette. Leveling-up of operation may even increase production giving an annual potential earnings of about Php29,000.00 to Php69,000.00. The quality of the three briquettes produced slightly varied and some of the parameters analyzed like bulk density, heating value, moisture, N and S closely met or have met the requirements of DIN 51731.