

DEVELOPMENT OF AN AUTOMATED CHARCOAL BRIQUETTE MAKER

Design Project

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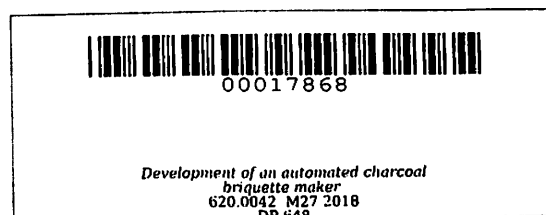
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DEVELOPMENT OF AN AUTOMATED CHARCOAL BRIQUETTE MAKER

Undergraduate Design Project
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ABSTRACT

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The study, development of an automated charcoal briquette maker was designed and constructed at Alfonso and Mendez, Cavite from September 2017 to November 2018. This was tested and evaluated at the Cavite State University Main Campus, Engineering Science (ES) Building on second week of November 2018.

The design project was conducted to develop an automated charcoal briquette maker. Specifically, it aimed to design and develop a small-scale machine controlled by a micro-controller based circuit to provide an alternative for the manual mixing and presser machine.

The automated charcoal briquette maker started its process by using a push button. The dispensers released a right amount of raw materials in the mixing chamber, in which the powder and liquid ingredients was mixed thoroughly. Afterwards, the mixer discharged its content and transferred to the extruder where the temperature was required to maintain. The mixture in the cylindrical barrel was cooked and compressed through the nozzle. The knife blade used to cut the output from extruder to produced cylindrical briquettes with a concentric hole.

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DEVELOPMENT OF AN AUTOMATED CHARCOAL BRIQUETTE MAKER

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INTRODUCTION

Charcoal Briquettes is the new technology in charcoal production that composed of different waste carbon-contained materials tightly compressed into solidified pieces. Water hyacinths, leaves, twigs and branches of trees, trash such as paper, coconut husk, corn cobs, and rice hull are commonly used in making the technology work. Briquettes are well-known as alternative to firewood, charcoal or any other fuel. Also, it can served as odor neutralizer, fly repellent as well as organic fertilizer or soil conditioner.

In the Philippines, water lily blocks rivers and irrigation canals, hinders fishing, and enhances breeding places for vectors that transmit harmful diseases. To address this, the Ecosystems Research and Development Bureau (ERDB) and Department of Environment and Natural Resources (DENR) developed the green charcoal briquette which made of these water lilies and coconut husk. It is not dirty and only releases