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DEVELOPMENT OF A SOLAR COOKER

RESEARCH STUDY

Applied Research IV

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CAVITE STATE UNIVERSITY

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ABSTRACT

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This study was conducted at the Faculty Village, Cavite State University, Indang, Cavite. The study aimed to develop and evaluate the performance of the solar cooker.

Different amounts of rice (one, two and three cups), 400 gms. of pork and water (1 and ½ liter) was used in the testing and evaluation of the solar cooker. The solar cooker was placed on plain ground and concrete pavement for comparison.

Results reveal that the solar cooker placed on concrete pavement generates more heat than the solar cooker placed on plain ground. Results also show that the ambient temperature greatly affects the temperature inside the solar cooker. A high ambient temperature means a higher temperature build-up inside the solar cooker. The solar cooker attained a maximum temperature of 71.75°C when placed on concrete pavement. The solar cooker, whether on plain ground or on concrete pavement, has the capability to cook 2 cups of rice from 8 am to 12 noon and 400 gms. of pork also from 8 am to 12 noon.

The total cost of fabricating the solar cooker was P 2,241.50.

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A Research study submitted to the Faculty of the Laboratory School, College of Education, Cavite State University in partial fulfillment of the requirements in Applied Research IV under the joint supervision of Eng. Camilo Polinga and Prof. Tadeo Mojica.

INTRODUCTION

The country faces so many problems among which include its environment and energy resources. With the high cost of petroleum products coupled with the dwindling number of trees, there is a need to look for other sources of energy to meet the daily needs such as cooking.

One ready source of energy comes from the sun whose radiant energy can be converted into usable form such as a solar cooker. Aside from being cheap, it is environment friendly.

Solar cookers are becoming more popular especially among researchers and innovators. However, there are certain problems that exist concerning the promotion and use of solar cookers in communities, notably surrounding acceptability, training, support and evaluation. This lack of adequate training, evaluation and development are often cited as the most important reasons for the failure of solar cookers (Marlett Wentzel, 1995).

If properly studied and developed, it is hoped that it would save millions of wood and carbon dioxide in the atmosphere. This will help relieve millions of people from hardships and will keep the country much cleaner.