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AUTOMATION OF COFFEE-SEED GERMINATION FOGGING SYSTEM

THESIS

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AUTOMATION OF COFFEE-SEED GERMINATION FOGGING SYSTEM

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ABSTRACT

BENDO, EUNIZEL M. and **SHERYL C. ROLLE Automation of Coffee-Seed Germination Fogging System**. Undergraduate Design Project. Bachelor of Science in Electronics and Communications Engineering. Cavite State University, Indang, Cavite. April 2007. Adviser: Engr. Michael T. Costa.

The Automation of Coffee-Seed Germination Fogging System project was constructed in Alfonso, Cavite. The design was tested and evaluated in Cavite State University. The main objective of the study was to automate the existing fogging system of Cavite State University main campus. The design was conducted to provide integrated controls for the easier way of managing the fogging system.

The system was composed of two main parts: the transmitter side and receiver side. On the transmitter side is the sensor, microcontroller unit, 7-segment display and the transmitter circuit. The system uses three relative humidity (RH) sensors that are incorporated inside the propagation bench of the fogging system. It is connected to the microcontroller unit which serves as the brain of the whole system. The 7-segment display shows the reading of the RH and the transmitter is responsible for the transmission of signals to the receiver. On the receiver side is the receiver and the valve. The receiver relays the message to the valve to activate its operation.

The final testing and evaluation of the device was done at Cavite State University main campus. Actual demonstration of the operations and functions of the system was presented to the adviser and technical critic.

The design was evaluated by monitoring the relative humidity that was responsible for the ON and OFF operation of the fogging system.

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AUTOMATION OF COFFEE-SEED GERMINATION FOGGING SYSTEM [1/]

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INTRODUCTION

Nursery for coffee-seed germination gathers light and trap considerable heat contained in sunshine. It is efficient at retaining relatively low levels of solar energy, that without specialized ventilation and cooling equipment, it can quickly dry coffee seedlings during high light periods.

The actual temperature of any given leaf in the greenhouse depends upon the surrounding air temperature and the relative humidity content of the air. Thus, t is favorable to keep the relative humidity needed by a given plant, in this case the coffee seedlings, constant.

Coffee seedlings are cuttings which has leaves but no roots. Because of this, these leaves lose moisture through transpiration (loss of water trough the leaves or stems of plants) more quickly that it can draw up through the slanted cut end. Therefore, it is essential to keep the relative humidity around the cutting close to 100 percent to reduce moisture loss.