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**DESIGN AND DEVELOPMENT OF A PC-BASED TEMPERATURE  
AND RELATIVE HUMIDITY CONTROL UNIT OF A FORCED  
CONVECTION TYPE MULTI-PURPOSE CROP DRYER**

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RELATIVE HUMIDITY CONTROL UNIT OF A FORCED  
CONVECTION TYPE MULTI-PURPOSE  
CROP DRYER**

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*Design and development of a PC-based  
temperature and relative humidity control  
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## ABSTRACT

**CUADRA, MARITES MOJICA and DE LUNAS , JOCELYN MESINA.**

“Design and Development of a PC-Based Temperature and Relative Humidity Control Unit of a Forced Convection-type Multi-purpose Crop Dryer.” Bachelor of Science in Computer Engineering. Cavite State University, Indang, Cavite. April 2001. Adviser: Ms. Florence B. Marero.

The design project was evaluated at the Agricultural Machinery Building, College of Engineering, Cavite State University, Indang, Cavite.

The study aimed to design and develop an automatic control unit that will control the temperature and relative humidity within the crop dryer.

The hardware of the system consisted of the interface card, power supply, relay module, temperature and relative humidity control unit and the dryer itself.

Visual Basic 5.0 was the language used to develop the software of the system. The software provided the user-monitor interface.

Results showed that the temperature and relative humidity within the drying chamber were automatically controlled. The machine was automatically switched off once the computed drying time elapsed.

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## **INTRODUCTION**

Given the right technologies, the Philippines has the potential to become one of the major producers and processors of agricultural crops. Filipino farmers engaged in root crop production, for instance, cannot increase production despite the demand primarily because they do not have the post harvest technology for processing particularly in drying. Indeed, the Philippines suffer from drying problem during rainy season harvests. Thus, artificial drying is needed.

Matel (1991) stated that agri-products preservation like drying, is designed to prevent undesirable changes in various crops. Such changes can be caused by the invasion and growth of microorganisms or by chemical, physical, and biochemical reactions of the compounds present in the food itself. Growth of undesirable microorganisms like mold, bacteria, and yeast in them, lower their quality.