SMART CROP AND HEALTH MONITORING SYSTEM FOR CUCUMBER FARMING: INNOVATING TECHNO–ECOLOGICAL AWARENESS

An Undergraduate Thesis

Presented to

the Faculty of the College of Engineering

University of Rizal System

Morong, Rizal

In Partial Fulfillment

of the Requirements for the Degree

Bachelor of Science in Computer Engineering

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April 2023

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ACKNOWLEDGEMENT

The researchers wish to convey their deep admiration and gratitude to the following individual whom without hesitation gave guidance, effort, and help to the realization and advancement of this research

First, to **GOD,** for giving them us knowledge, strength, ability and opportunity to undertake this study and complete it satisfactory;

Engr. ALLAN P. ANORICO, Dean, College of Engineering, their research professor and panel chairman, for sharing his expertise and guidance to make this project possible, and for his enthusiastic support while this research was being conducted;

Dr. ANGELUZEL TONIDO-REYES, the researchers' thesis adviser, for sharing her knowledge, providing insightful comments, and making suggestions that will help the improvement of this study;

Engr. FREDELINA F. DE LEON, the critic reader, for giving her suggestions in editing and the necessary revisions for the improvement of the manuscript;

Engr. PAUL JOHN L. SAN ANDRES, the thesis expert, for the assistance and for sharing his expertise regarding the statistical methods utilized in the pursuit of this study.

The Researchers

DEDICATION

This research is wholeheartedly dedicated to our beloved parents, who were our source of inspiration and gave us courage when we thought about giving up, who continually offer and provide their moral, spiritual, emotional, and financial assistance.

To our instructors, friends, and classmates who support us and shared their words of guidance and encouragement to complete this research.

And lastly, we dedicated this book to the Almighty God, thank you for the guidance, strength, power of mind, protection, skills and for giving us a healthy life.

All of these, we offer to you.

Adonis

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ABSTRACT

TITLE:	SMART CROP AND HEALTH MONITORING SYSTEM FOR CUCUMBER FARMING: INNOVATING TECHNO–ECOLOGICAL AWARENESS
AUTHORS:	Adonis S. Rampas Carl Angelo Azarcon John Rey P. Guillamon Roberto Miguel M. Santos
COURSE AND ACADEMIC YEAR:	Bachelor of Science in Computer Engineering A.Y. 2022-2023
TYPE OF DOCUMENT:	Undergraduate Thesis
NO. OF PAGES:	92
NAME AND ADDRESS OF INSTITUTION:	University of Rizal System College of Engineering Morong, Rizal

EXECUTIVE SUMMARY:

The general objective of this study was to design and develop a Smart Crop and Health Monitoring System for Cucumber Farming. The design of the system is mainly composed of “Palochina wood” to maintain the lightness as well as durability.

Specifically, the study aimed to construct a device and system suitable for cucumber farming and to develop a system that inputs the gathered values of different parameters such as soil moisture, temperature and humidity. The study also aimed to evaluate the acceptability of health monitoring system for plants in terms of its functional suitability, performance, reliability, maintainability and portability.

In developing the system, the main hardware components are NodeMCU ESP8266, DHT22 sensor, Liquid Crystal Display (LCD), Breadboard and Temperature Sensor. In creating the program for the monitoring system, the software was written in Arduino IDE. In gathering the data results of the study, a questionnaire checklist was conducted. The respondents of the study were mainly composed of experts such as farmers and engineers, as well as students from different universities.

Based on the gathered values and data, the summary and conclusion were established. The Smart Crop and Health Monitoring System for Cucumber Farming: Innovating Techno-Ecological Awareness was successfully developed. The level of acceptability of the Smart Crop and Health Monitoring System was found very much acceptable in terms of functional suitability, performance, reliability, maintainability and portability as perceived by the respondents.

On the other hand, in accordance to the conclusion and findings of the study, the researchers set forth some recommendations. Develop a monitoring device that is made up of stronger materials that will provide fire resistant capabilities, security and durability for the device structure. The device should also monitor not just the soil moisture, temperature and humidity but also the pH level, includes pest infestation, light, and nutrient levels. Make the device work in wide variety areas. Make the parameters adjustable by using the data gathered by the different sensors of the monitoring system. Include alert system through e-mail and text messages. Consider improving the design of graphical user interface (GUI).

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