SMART INSECT REPELLER WITH RASPBERRY PI 3.0 PROJECT REPORT

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ABSTRACT

Every farmer usually faced a problem with the damaging plantation by the insect. Thus, using a pesticide to prevent the insect keeps damaging the plant is very effective in order to maintain the plant quality. But using a pesticide excessively would also give a negative effect on the biodiversity around them. This project presents a system for insects and notifies the system. This system consists of two features which are automatic sprayer and notify system which both work simultaneously. This system will be an alternative used to assist farmers in greenhouse users in the agriculture sector. Services provided by this system are detecting the movement of the insect which will trigger a spray with organic pesticides to spurt and prevent the feed of the insect on the plant. The idea is that this system will ease the user to prevent from their plant been damaged by the unwanted insect automatically. In this project, this system consists of motion sensors, Raspberry Pi as a microcontroller, DC motor, and infrared sensors. A database will be developed for the user to monitor the usage of the pesticide and app that will notify the user if an intruder enters the greenhouse. In this project, the database will be display and the user will able to observe through blink apps and the monitor. The user also will be notified by the sensor if there is an intruder. The system will send a notification to the user when there is an intruder sense by the motion sensors and when the pesticide is finish senses by the infrared sensors. Throughout this research, the expected results are the user will able to control the attack of insects at the same time able to control the usage of the pesticide used and able to protect their greenhouse from being enter by an intruder.

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CHAPTER ONE
INTRODUCTION

1.1 BACKGROUND OF STUDY

Agriculture is the basis of all civilization. It is part of everything from the food we eat to the clothing we wear. Agriculture shapes many of the traditions and values that this country was built on. Agriculture is the science, art, and occupation of producing crops, raising livestock, and cultivating the soil processing, financing, marketing, and distribution of agricultural products. Agriculture also consists of farm production supply and service industries, development and maintenance of recreational resources with the use and conservation of land and water resources. Agriculture is very important in our life as it also stables the need for living creatures and nature needs.

The usage of pesticides is very common in agriculture. It also has numerous beneficial effects in controlling pests or insects that can affect the productivity in agriculture development [1]. Pesticides are chemicals that kill or manage the population of pests. There are many different types of pesticides on the market today, but the most common are herbicides and insecticides, which kill or manage unwanted plants and insects. But when there is excessive usage of pesticides happen, it can cost a harmful effect against the consumer and also the ecosystem.

The Internet of Things (IoT) has the capability to transform the world we live in; more efficient industries are one of the components of the IoT equation [2]. However, the application of technology like IoT in agriculture could have the greatest impact. Smart farming based on IoT technologies will enable growers and farmers to reduce waste and enhance productivity ranging from the quantity of fertilizer utilized to the number of journeys the farm vehicles have made. In terms of environmental issues, IoT-based smart farming can provide great benefits to the agriculture sector.

The clear reason to grow vegetables, flowers, and herbs in the greenhouse is to have crops at a time of year when it cannot grow outdoors. Growing vegetables in the greenhouse bring many benefits. However, there also have several problems that