

UNIVERSITI TEKNOLOGI MARA

**DESIGN AND FABRICATION OF
IOT SMART FARM**

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ABSTRACT

This project will help farmers to be connected with the farm at any place. It can help to observe the temperature, humidity and potential of hydrogen (pH) of the land. Most farmers will have a problem to keep watch on the farm when traveling far away for work. This is supported with the constant hot weather in Malaysia. So, this project is aiming to help farmers to keep the farm in check at any place and time. The project will be using a few sensors such as temperature sensor, pH sensor and soil humidity sensor to get the information needed and it will send the information to the phone of the farmers through Arduino Internet of Things (IoT) Cloud. When the information has been received, farmers can activate the water sprinkler system with just a press of a button from the phone to water the plants. This will ensure that the plants can grow healthy. The project will be using a close loop system because it can reduce a system sensitivity to external disturbance. The hope for this project is that it will help farmer to be more efficient in keeping the farm in check and also increase the quality of the product produce.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Internet of Things (IoT) smart farming is a system that is used to monitor the crop field with the help of sensors like light, humidity, temperature, etc. It can also make the irrigation system to become automatic [1].

Many people will gain many advantages if willing to adapt to this style of farming. If farmers use this style of farming, information like soil humidity and also temperature can be obtained accurately. With that information, farmers can activate the water pump with just one click of a button. This will help reduce manpower and also the cost to hire people. Also with more accurate data, it will increase the plant growth and quality which can help to feed more people in the future. IoT smart farm can help farmers to overcome the common challenges in the farming industry and also increase the productivity of the farm.

1.2 Problem Statement

Most farmers need to go travelling far away for work. For this occasion, farmers will need to hire people to watch over the farm and this will increase the cost. While leaving the plants unattended will lead the plant to wilt. So the usage of an Internet of Things smart can help these farmers to keep track of the condition at the farm without being there.

The inconsistent rainfall in Malaysia can also lead problem to any plant loving people. Not enough water when watering the plant may make the plant to go wilt while too much water can also damage the plants. It can also lead to water wastage.

Finally, Malaysia is a country with constant hot temperature. This will lead to plants needing more water to counter the heat and people with little experience might not know this.