**V S B ENGINEERING COLLEGE, KARUR**

**Department of Electronics and Communicaion Engineering**

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**LITERATURE SURVEY**


**TITLE** : Smart Farmer – IoT Enabled Smart Farming Application

**DOMAIN NAME** : Internet of Things

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## ABSTRACT


Agriculture is a backbone of India. About 60% of our country's population works in agriculture or the primary sector. It contributes more to our country's GDP. It employs the majority of India's population. Increasing population and abrupt weather fluctuations around the world has put huge pressure on agriculture. In this modern age, improved technology-based agriculture practices are replacing the old farming practices. An IoT based smart farming involves the integration of technology for better utilization of resources. And it will assist farmers in making wise agricultural decisions. The goal of this smart Agriculture or farming is to get live data like temperature, soil moisture and humidity to monitor the surrounding environment. All of this is accomplished with the help of temperature, humidity, and moisture sensors. This study presents a survey of IoT solutions and demonstrates how IoT can be integrated into the smart agriculture sector.


## INTRODUCTION

Agriculture plays a major role in world economy. An entire world can be depend upon agriculture for survival. Over the years, there has been increase in the food and other agriculture products due to increasing the world’s population and the need to provide food security in different parts of the world. The advancement in technology, new farming methods have been introduced, which are slowly replacing some of the commonly used traditional methods of farming.

IoT is defined as the internet enabled embedded device to perform to collect the information, process the information and provide a solution. In other words, a device can be accessed by a person to perform some tasks in anywhere in the world. In recent years, IoT has been applied in a series of domains, such as smart homes, smart cities, smart energy, autonomous vehicles , smart agriculture, campus management, healthcare, and logistics. An illustration of rich and diverse IoT applications for smart agriculture. In the smart agricultural sector, automation solutions and technologies, mechanical

machines, knowledge, decision-making tools, services, and software are integrated seamlessly to help farmers improve productivity, product quality, and profitability

## LITERATURE SURVEY

The author describes [1] Internet of things (IoT) gives a new proportion of smart farming and agriculture territory. Because with the development of the current world, the internet of things field has peaked with modern technology and modern techniques. In the modern world, IoT is used in every domain like smart city, smart university, smart car park system, etc. This paper is about the implementation of the smart farm. IoT concept helps in cost-efficient farming activities like crop and other resource management. With a wireless sensor network, it is easy to connect with every sensor node placed in the farming environment. Also, with the wireless sensor network, it can connect with long-distance ranges. With the help of a sensor network, it can collect the data from the farming environment and analyze it according to the pre-defined values. The proposed system used IoT sensors to collect the data are soil moisture sensors, temperature sensors, water volume sensors, etc. According to the existing system analysis, the proposed solution contains a smart farm environment and a real-time monitoring system with the wireless sensor network for node connectivity. The proposed system provides a more reliable and flexible smart concept for the farmers, and it is a simple architecture that contains the IoT sensors that collect the data from the farm field and transfer those data through wireless sensor network to the central server and according to the input data, the primary server assigning the task to the particular devices.

The author describes [2] The term used for networking of objects, equipment, vehicles, and other electronics device into the network for information exchange purpose is called Internet of Things (IoT). Nowadays, IoT is widely used for connecting device and collecting data information. Therefore, the use of IoT is very relevant for agriculture. The project is about smart agriculture system that is implemented with IoT. The system is combined with irrigation system in order to cope with the unpredictable weather in Malaysia. Raspberry Pi 4 Model B is used as the microcontroller of this system. DHT22 and soil moisture sensor is used to detect the temperature and humidity in surrounding and moisture level of the soil respectively where the output will be displayed on smartphone and computer. So, Smart Agriculture Systems using Internet of Things with Raspberry Pi brings a tremendous impact on the farmer's working method. Plus, it will also bring a positive effect on the crop production in Malaysia. Where about 24.44% water savings rate in a year can be achieved when using IoT-based irrigation systems compared to traditional irrigation systems. This would save the expenditure for hiring workers and avoid water wastage in daily needs.

The author describes [3] Agriculture and allied activities play a vital role in a country's economic prosperity. The conventional methods in agricultural practices have become insufficient to cater to the increasing needs. To fulfill the demands, new technologies are to be introduced to raise agricultural standards. Over the past few years, there has been significant interest in designing smart agricultural systems. The manageability of agricultural frameworks has turned into a noteworthy concentration for discusses about future human survival. A significant part of the contention seems to depend on shortsighted understanding of biological models and flops enough to define what maintainability goals are being looked for. To adapt to the undeniably multifaceted nature and between connectedness of current cultivating frameworks with regards to globalization and potential bothers like environmental change, we require a pluralistic way to deal with strategy, which can adapt to the abnormal amounts of vulnerability in these territories and which enables most extreme flexibility of reaction to evolving conditions.

The author describes [4] India is agriculture sector, on either side, is losing ground every day, affecting the ecosystem\'s output capacity. In order to restore vitality and put agriculture back on a path of higher growth, there is a growing need to resolve the issue. A large-scale agricultural system necessitates a great deal of upkeep, knowledge, and oversight. The IoT is a network of interconnected devices that can transmit and receive data over the internet and carry out tasks without human involvement. Agriculture provides a wealth of data analysis parameters, resulting in increased crop yields. The use of IoT devices in smart farming aids in the modernization of information and communication. For better crop growth moisture, mineral, light and other factors can be assumed. This research looks into a few of these characteristics for data analysis with the goal of assisting users in making better agricultural decisions using IoT. The technique is intended to help farmers increase their agricultural output.

The author describes [5] Internet of Things (IoT) technology has brought revolution to each and every field of common man’s life by making everything smart and intelligent. IoT refers to a network of things which make a self configuring network. The development of Intelligent Smart Farming IoT based devices is day by day turning the face of agriculture production by not only enhancing it but also making it cost-effective and reducing wastage. The aim / objective of this report is to propose IoT based Smart Farming System assisting farmers in getting Live Data (Temperature, Soil Moisture) for efficient environment monitoring which will enable them to increase their overall yield and quality of products. The IoT based Smart Farming System being proposed via this report is integrated with Arduino Technology mixed with different Sensors and a Wi-Fi module producing live data feed that can be obtained online from Thingsspeak.com. The product being proposed is tested on Live Agriculture Fields giving high accuracy over 98% in data feeds.

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