

IOT BASED SMART CROP PROTECTION SYSTEM FOR AGRICULTURE

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INDEX

S.No	Topic	Page No
1.	Problem Statement	1
2.	Reference	2
3.	Literature survey of paper - 1	3
4.	Literature survey of paper - 2	4
5.	Literature survey of paper - 3	5
6.	Literature survey of paper - 4	6

PROBLEM STATEMENT:

As new technologies have been introduced and utilized in the modern world, there is a need to bring advancement in the field of agriculture also. Various Researches have been undergone to improve crop cultivation and have been widely used. In order to improve the crop productivity efficiently, it is necessary to monitor the environmental conditions in and around the field. The parameters that have to be properly monitored to enhance the yield are soil characteristics, weather conditions, moisture, temperature, etc., Internet of Things (IOT) is being used in several real time applications. The introduction of IOT along with the sensor network in agriculture refurbish the traditional way of farming. Online crop monitoring using IOT helps the farmers to stay connected to his field from anywhere and anytime. Various sensors are used to monitor and collect information about the field conditions. Collectively the about the farm condition is sent to the farmer through GSM technology. Various sensor nodes are deployed at special locations in the greenhouse. Controlling those parameters are through any remote device or internet services and the operations are completed by means of interfacing sensors, with microcontroller. Power generation and supply is usually a massive problem. This project is also consisting of solar power generation and rainwater harvesting as technology method is implemented along with crop safety.

REFERENCE:

1.IoT based smart crop protection and irrigation system

by Ipseeta Nanda, Chadalavada Sahithi, Medepalli Swath, Suman Maloji, Vinod Kumar Shukla

2.IoT-Based Smart Crop Field Monitoring and Protection System

from Heavy Rainfall Utilizing by G.Dhanalakshmi. M.Anil & P.Madhavi

3.Smart Crop Protection System from

Animals and Fire using Arduino by N.Srikanth, Aishwarya, Kavitha.H.M, Rashmi Reddy.K, Soumya.D.B

4.Smart Crop Protection System from Wild Animals Using

IoT by Priyanka Deotale, Prasad Lokulwar

3.Literature survey of paper - 1

IoT based smart crop protection and irrigation system

by Ipseeta Nanda, Chadalavada Sahithi, Medepalli Swath, Suman Maloji, Vinod Kumar Shukla

IIOT technologies are used in agriculture fields to help farmers identify various problems and provide solutions. This project aims at providing crop field monitoring and attack against animals. Since the traditional methods like manual monitoring which require sufficient amount of labors and electric fencing depends on type and size of the field. It consists of various sensors and controllers in which it uses wireless sensor network (WSN) and ARM Cortex-A board that consumes 700mA or 3W of power. The various sensors like DHT 11 Humidity & Temperature sensor, Passive Infrared sensor (PIR), Light dependent Resistor sensor (LDR), HC-SR04 Ultrasonic sensor and cameras for capturing images of the animals that enter the field, which can be used for further processing to Obtain the results.

The process begins with the PIR sensor, as soon as it detects any motion within the range of 10 meters, it automates the camera to capture the image and starts dealing out the image for processing, these images are stored in cloud, simultaneously a message will be generated automatically using SIM900A module to notify the intrusion, along with humidity and temperature. The processed information generates a buzzer sound, all the final results are shared to the farmer's mobile to take actions.

4.Literature survey of paper - 2

IoT-Based Smart Crop Field Monitoring and Protection System

from Heavy Rainfall Utilizing by G.Dhanalakshmi. M.Anil & P.Madhavi

The paper induces the idea of resolving the problem using microcontroller components i.e., raspberry pi, and a sensor element which includes downpour sensor, pressure sensor, temperature sensor. Each sensor senses the parameter which it specializes and reverts back the result to the system.

The sound, the moisture and the temperature is stored according to the specific plants, if the level of the parameters results in abnormalities the siphon which commences the water supply, automatically stops the waterflow pipe to a particular plant. The raspberry pi architecture and the IoT is connected to a private cloud for the purpose of data storage. Even Though the paper provides the quality based solution, the quantity of the components is quite high which increases the probability of failure in any circumstances. The caution provided by the system will be advantageous as it prevents the damages created by the torrential rain and also protects the surrounding humans. The downpour sensor is a sensor designed to measure the amount of downpour and transfer the collected information to the dc engine in the system.

5.Literature survey of paper - 3

Smart Crop Protection System from Animals and Fire using Arduino by N.Srikanth, Aishwarya, Kavitha.H.M, Rashmi Reddy.K, Soumya.D.B

The purpose of this work is to design and implement an advanced embedded system for Many times, indigenous animals like buffalo, cows, goats, birds, and fire destroy crops in farms. For the farmers, this results in enormous losses. Farmers cannot block entire fields or remain on the field all day to secure it. As a result, we suggest that crops be protected automatically against both fire and animals. This system is based on an Arduino Uno microcontroller. This device employs a motion sensor to find approaching wild animals close to the field and a smoke sensor to find a fire. The sensor instructs the microcontroller to operate in this situation. A warning is currently being sounded by the microcontroller to entice the animals away

6.Literature survey of paper - 4

Smart Crop Protection System from Wild Animals Using IoT by Priyanka Deotale, Prasad Lokulwar

Crops in the farms are many times devastated by the wild as well as domestic animals and low productivity of crops is one of the reasons for this. It is not possible to stay 24 hours in the farm to sentinel the crops. So to surmount this issue an automated perspicacious crop aegis system is proposed utilizing Internet of Things (IoT). The system consists of esp8266 (nodeMCU), soil moisture sensor, dihydrogen monoxide sensor, GPRS and GSM module, servo motor, dihydrogen monoxide pump, etc. to obtain the required output NodeMCU is an open source development board. It allows you to program the ESP8266 WiFi module with the simple and powerful LUA programming language or Arduino IDE. The main advantage is the embedded wireless technology that is web friendly with no use of shields or any peripherals, as is required for Arduinos. The price and size are the USP of the module with the added advantage of good speed and processing power. As soon as any kineticism is detected the system will engender an alarm to be taken and the lights will glow up implemented at every corner of the farm. This will not harm any animal and the crops will stay forfended. The Dihydrogen monoxide sensor is used to detect the amount of water present in the soil, based upon which dihydrogen monoxide pump will automatically pump the water to the crops.

