

# **IOT BASED SMART CROP PROTECTION SYSTEM FOR AGRICULTURE**

## **TEAM DETAILS:**

**Team Name: TAITANS**

**Team Leader:**

- **SANOFER S, Department of ECE**

**Team Members:**

- **RABAKA R, Department of ECE**
- **SAMYUKTHA S, Department of ECE**
- **NIRTHIKA V, Department of ECE**

## **Project Info:**

**System Required:**

**RAM-Minimum 4GB Processor-Min. Configuration  
OS-Windows/Linux/MAC**

## **Description:**

An intelligent crop protection system helps the farmers in protecting the crop from the animals and birds which destroy the crop. This system also helps farmers to monitor the soil moisture levels in the field and also the temperature and humidity values near the field. The motors and sprinklers in the field can be controlled using the mobile application.

## **LITERATURE SURVEY:**

**1)N S Gogul Dev,IoT Based Smart Crop Protection System,Published in 2019 2nd International Conference on Intelligent Computing, Instrumentation and Control Technologies**

**One of the primary issues farmers facing in our nation is low crop output. There are two basic causes for this crops damaged as a result of severe weather and wild animals. This offers a remedy for agricultural destruction caused by animals.This system will give farmers a full technological answer using the Internet of Things (IOT) to protect their crops from wild animals and give them information to increase their output. PIR sensors and cameras are used to detect animals, and Tensor Flow image processing techniques are used to identify the detected animals. The system's processing component is a Raspberry PI, and sound buzzers are utilized to transmit the ultrasound frequencies.**

**2)Vikhram.B,Animal Detection System in Farm Areas,International Journal of Advanced Research in Computer and Communication Engineering on March 2017**

**The Author's primary goal is to prevent animal damage to crops while also diverting animals away from harm's way. A system for detecting animals is intended to alert users of their presence.To track the movement of the animal and communicate with the controller, we used PIR and ultrasonic sensors in this project. By creating sound and a signal that is further transferred to GSM, it diverts the animal. This alerts the forest department and farmers right away.**

**3)Guguloth Devilal,Protecting Crops From Birds using Sound Technology In Agriculture,CSIR-Central Glass and Ceramic Research Institute, Kolkata, India on July 2018**

**Farmers face a variety of issues in agriculture on a daily basis. In the past, many animals would damage the fields by**

**getting into the crops. They employ a variety of techniques to listen such kinds of problems. Birds are a serious issue in agriculture nowadays. Crop is being eaten by birds that land on it. In this study work, we address a few issues. Each species of animal, or group of species, has a distinct range of hearing frequencies. A certain reasoning is used to estimate their bothersome frequency. Birds in the daytime make annoying noises in areas outside and in agriculture. Birds consume wheat, rice, rabi crops, and other crops in the early morning and late evening so humans can harvest them.**

**4) M. Jaya Prabha, Smart Crop Protection System from Animals International Journal of Engineering and Advanced Technology (IJEAT) on April, 2020.**

**Animals including buffalo, cows, goats, birds, and wild elephants frequently destroy crops in farms. The farmers suffer significant losses as a result. Farmers are unable to guard a field for a full day. An animal detection system has been created to detect the presence of animals, offer a warning, and direct the animal without injury in order to solve this issue. The technology is set up to constantly monitor the field for the presence of any animals. In this project, animal movement is detected using IR sensors and ultrasonic sensors, which then provide a signal to the controller. Additionally, sound and signal generation divert the animals, and this signal is transferred to GSM to immediately warn farmers.**

**5) S. R. Chourey, IOT Based Wireless Sensor Network for Prevention of Crops from Wild Animals, IETE Zonal Seminar “Recent Trends in Engineering & Technology” on 2017**

**The need for wildlife conflicts with the needs of the human population, costing locals and cultivated land. Standing crops are frequently destroyed by wild animals, which lowers agricultural production annually and costs farmers money. Due to low farm productivity in our area, farmer suicide is a major issue. The two**

**main causes of this low production are crop destruction by wild animals and crop destruction by natural objects. In order to protect farmers' crops from wild animals, the author came up with a comprehensive technical solution using wireless sensor networks (WSN) and the Internet of Things (IOT). It has every kind of sensor, controller, and actuator needed for a WSN, with a Raspberry Pi serving as the system's brain.**

**6)Shanmukhappa Angadi,A Security System For Intrusion Detection In Agriculture,International journal of scientific and technology research, November 2019.**

**India is mostly an agricultural nation. Security on agricultural farms is crucial to safeguarding the harvest. Animals or people with malicious intent to rob or damage the property have the power to wreck valuable investments.Modern technology's introduction into agriculture has made it possible to consider installing security systems on farmlands. IoT technology facilitates the development of a number of applications for smart agriculture. The possibilities are unlimited when vision is integrated with IoT. This research makes a fresh suggestion for agricultural farmland vigilance.The suggested method uses a Raspberry Pi board to look for suspicious activity or movement in the farmland and then activates the PiCam to snap pictures of the scene.**

**7)Dr M Suchithra,Monitoring of agricultural crops using cloud and IOT International Journal of Pure and Applied Mathematics,2018**

**For centuries, farming has been the main kind of employment in our nation. In India, a third of the country's GDP and nearly 70% of the population are dependent on agriculture. Agriculture is currently being hampered by the migration of people from rural to urban areas.The Author used IOT-based smart agriculture techniques to solve this issue. With the help of a variety of approaches, including precision farming and sustainable agriculture, the Internet of Things**

**(IOT) is revolutionizing agriculture and empowering farmers to overcome obstacles in the field. The Internet of Things (IOT) connects people, things, and other people. Through the existing network model and IOT, items can be sensed and operated remotely.**

**8)Dr.M. Chandra Mohan Reddy,SMART CROP PROTECTION SYSTEM FROM LIVING OBJECTS AND FIRE USING ARDUINO ,SEPTEMBER 2020.**

**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**

**9)S. Ahmad Syafik Suraidi ,Development of Hydroponic Root Zone Cooling System for Selected Vegetables,Paper presented at the 2018 MSAE Conference,Serdang, Selangor D. E., Malaysia.7 & 8 February 2018**

**For growing green vegetables and occasionally fruit vegetables, hydroponics is frequently used. Wastes of growing medium and liquid are major issues with hydroponic systems, especially in the tropics, water temperature can readily rise in the presence of direct sunshine. Therefore, the goal of this study is to create a cooling system for hydroponic water tanks that can regulate the temperature of dissolved nutrients in the water to meet crop development requirements. The invention of the hydroponics root zone cooling (HRZC) system and the effectiveness of *Lactuca sativa***

**cultivation using the HRZC system are highlighted in this research. The hydroponic growing container has a length of 4 metres, and it was shydroponic water-dissolved nutrient temperatures flow to the hydroponic growing container at various heights.**

**10)Krunal Mahajan,SMART CROP PROTECTION SYSTEM,International Research Journal of Engineering and Technology (IRJET) Feb 2021**

**This provides an overview of numerous studies on intelligent crop protection systems. We have a lot of technology, including the systems and methods we explain in this paper, that can defend the farm around-the-clock. The Author used a variety of technological tools at our disposal to help protect the farm. The author introduced farm protection systems built on Raspberry Pi and Arduino.However, those Systems have distinct platforms and mythologies for it, and the costs of such projects have gone up as well, making them unaffordable for farmers. Our main goal was to create a technology that could assist a farmer in safeguarding their farm against animals without endangering them.**