IOT based smart crop monitoring

As new technologies has been introduced and utilized in modern world, there is a need to bring advancement in the sector of agriculture also. Various Researches have been undergone to enhance crop cultivation and are widely used. So as to enhance the crop productivity efficiently, it is necessary to monitor the environmental conditions in and around the field. The parameters that has to be exact monitored to enhance the yield are soil characteristics, weather conditions, moisture, temperature, etc., Internet of Things (IOT) is being utilized in a number of real-time applications. The introduction of Internet of thing (IOT) along with the sensor network in framrefurbishes the traditional way of farming. Online crop monitoring the use of IOT helps the farmers to stay related to his subject from somewhere and anytime. Various sensors are used to screen and collect records about the area conditions. Collectively the about the farm circumstance is disbursed to the farmer thru GSM technology.

Tejas Khare et al, [1] Proposed automated crop field surveillance using computer vision. In this system the long range camera are placed at the corner of field or land with considering maximum field of view of camera. When animal is detected by the camera the distance between camera and speaker is calculated. The speaker nearest to the animal is identified. The object detection is carried out by pre-trained model YOLO V3 and COCO dataset. If animal is detected the speaker nearest to the animal makes sound. But this system doesn't work in different circumstances like in the night or dark (shadow).

Damini kalra et al, [2] proposed a system for crop protection from insects, pests, locusts, small animals and automatic irrigation system by sensing moisture, humidity and temperature of soil. The crop protection is done on the basis of sound technology and movement detection using ultrasonic sensor. The main advantage of this system is this system works in different circumstances like in night and dark (shadow).

M Jaya Prabha et al, [3] proposed a smart crop protection system from animals using Arduino UNO. The system is consisting of IR sensor for animal detection, ultrasonic sensor which rotates 360 degrees for detection of birds and a GSM module to send alert message to the farmer. It is a very simple system and cannot differentiate between human and animals. www.ijcrt.org © 2022 IJCRT | Volume 10, Issue 4 April 2022 | ISSN: 2320-2882 IJCRTO020033 International Journal of Creative Research Thoughts (IJCRT) www.ijcrt.org 162

Mr. P. Venkateswara Rao et al, [4] The purpose of this system is to build a system to detect movement of animal and produce sound. Camera and microcontroller are used to detect the animal. System consists of Arduino, camera, GSM and buzzer. Movement detected by camera module after detection of movement system produce sound to divert animals and by GSM model SMS is generated by the system to alert the owner. This system provides an early warning about possible intrusion and damage by animal. This system is not harmful for anyone in anyway. A camera is basic requirement for this project. The camera module is set in a location where the animals enter into the farm. Prohibit the entry of the animal and give alert to owner of the farm. The main problem of crop vandalization by wild animal tried to solve in this project. This system provides urgent attention and effective solution. System designed a smart embedded farmland protection which is low cost and also consumes less energy. Such system will be helpful to the farmer in protecting their field and save them from significant losses. This system help in achieving better crop yields thus leading to their economic well being.