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IDEATION PHASE-LITERATURE SURVEY
IOT BASED SMART CROP PROTECTION SYSTEM FOR AGRICULTURE

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***ABSTRACT*:**

This paper aims at designing and executing the advanced development in embedded system for Crops in farms are many times ravaged by local animals like buffaloes, cows, goats, birds, and fire etc. This leads to huge losses for the farmers. It is not possible for farmers to barricade entire fields or stay on field 24 hours and guard it. So here we propose automatic crop protection system from animals and fire. This is a arduino Uno based system using microcontroller. This system uses a motion sensor to detect wild animals approaching near the field and smoke sensor to detect the fire. In such a case the sensor signals the microcontroller to take action. The microcontroller now sounds an alarm to woo the animals away from the field as well as sends SMS to the farmer and makes call, so that farmer may know about the issue and come to the spot in case the animals don't turn away by the alarm. If there is a smoke, it immediately turns ON the motor. This ensures complete safety of crops from animals and from fire thus protecting the farmer's loss.

INTRODUCTION

In the world, the economy of many countries is dependent upon agriculture. In spite of economic development agriculture is the backbone of the economy. But because of animal interference and fire in agricultural lands, there will be huge loss of crops. Crop will be totally getting destroyed. There will be large amount of loss of farmer. To avoid these financial losses it is very important to protect agricultural field or farms from animal and fire. To overcome this problem, in our proposed work we shall design a system to prevent the entry of animals into the farm by using PIR. Our main purpose of project is to develop intruder alert to the farm, to avoid losses due to animals and fire. These intruder alert protect the crop from damaging that indirectly increase yield of the crop. The develop system will not harmful and injurious to animal as well as human beings. Theme of project is to design a intelligent security system for farm protection by using Embedded system based arudino . Animal attacks in India are a common story nowadays. Due to the unavailability of any detection system these attacks kill villagers and also destroy their crops. Due to lack of proper safety measures, these villagers are left helpless to their fate. Therefore a proper detection system could help save their lives and also to the preservation of crops. Also the crops of villagers are destroyed due to frequent interference of animals. To make the best use of mobile communication technology global system for mobile communication (GSM) and provide short message service (SMS). This system helps us to keep away such wild animals from the farmlands as well as provides surveillance functionality. It has been found that the odour of rotten egg helps to keep the wild pigs and deer from destroying the crops, hence the farmers manually spray the rotten egg solution on their fields, and firecrackers are used to ward off the wild

elephants that destroy the crops. This project is based on surveillance with an animal wardoff system employed in farmlands in order to prevent crop vandalization by wild animals. In addition to providing protection this system distinguishes between an intruder and an authorized person using RFID .PIR sensors are deployed in the area to detect any motion and hence turns ON a camera when movement is detected, thereby providing real time monitoring. It involves automation of certain methods used to prevent the wild animals from entering the farmlands and destroying the crops.

LITERATURE SURVEY

One of the major economic issues faced by the country is agriculture as this is the sector which is source of livelihood for about 54% of Indians till date. Still today this sector is not well developed and faces lots of problems resulting into low productivity of crops. As 43% of land in India, is used for farming but contributes only 18% of the nation's GDP. The poor condition of agriculture in the country is the point of concern for Indians. The rural farmers in India suffer from poverty and most of them are illiterate so there is lack of good extension services. The problem of wild life attack on crops i.e., crop Vandalization is becoming very common in the states of Tamil Nadu, Himachal Pradesh, Punjab, Haryana, Kerala and many other states. Wild animals like monkeys, elephants, wild pigs, deer, wild dogs, bison, nilgais, estray animals like cows and buffaloes and even birds like parakeets cause a lot of damage to crops by running over them, eating and completely vandalizing them. This lead to poor yield of crops and significant financial loss to the owners of the farmland. This problem is so pronounced that sometimes the farmer decide to leave the areas barren due to such frequent animal attacks

PROPOSED SYSTEM

The main aim of our project is to protect the crops from damage caused by animal as well as divert the animal without any harm. Animal detection system is designed to detect the presence of animal and offer a warning. In this project we used PIR and to detect the movement of the animal and send signal to the controller .It diverts the animal by producing sound by using Buzzer and the signal ,this signal is transmitted to GSM and which gives an SMS alert to farmers . And smoke sensor is used to detect fire in the form and DC motor is used to generate the signal it is consists of a 3v.LCD display is displays the receiving data. Here we are using step-down power supply 230 v the block diagram of the proposed smart crop protection system from animals and fire using Arduino Uno.

Reason	Percentage
Insects	30%
Weeds	45%
Diseas	20%
Others	5%

EXISTING SYSTEM

Traditional electric fence has been helpful as a guard of crops. However, that system has some problems such as it cannot notify the voltage which occasionally drops. Furthermore, the owners of the fence have to check the voltage but they cannot know it without going there.

An electric fence management system we develop uses wireless communication, and it enables the owners to know the communication, and it enables the owners to know the voltage and the state of the electric fence and monitor it from remote locations safely. It describes a demonstrative experiment in a mountainous region, and suggests an approach to resolve some problems. An electric fence system using wireless network technology has been developed. The system consists of several observers and a display the farmers are able to measure voltage at the fence, and have an ability to show it. The observers transmit the voltage with the direction of the voltage leak to the display.Here we are using 2*16 display shows the received data and the owners can know the state of the electric fence.

CONCLUSION

The problem of crop vandalization by wild animals and fire has become a major social problem in current time. It requires urgent attention as no effective solution exists till date for this problem. Thus this project carries a great social relevance as it aims to address this problem. This project will help farmers in protecting their orchards and fields and save them from significant financial losses and will save them from the unproductive efforts that they endure for the protection their fields. This will also help them in achieving better crop yields thus leading to their economic wellbeing.

FUTURE WORK

In the future, there will be very large scope, this project can be made based on Image processing in which wild animal and fire can be detected by fig4 PIR and if it comes towards farm then system will be directly activated through wireless networks. Wild animals can also be detected by using wireless networks such as laser wireless sensors and by sensing this laser or sensor's security system will be activated.

Advantages

- It is not possible for farmers to barricade entire fields or stay on field 24hours and guard
- Smart crop protection system diverts the animal without any harm.
- This Reduce to huge losses for the farmers.
- Improved the utilization of local resources for crop production.
- Minimum human effort.