# Protection of Crop from Animal via Intelligent Surveillance System

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**ABSTRACT:** *Present day animal attacks are a very common story in India because for detection of animals there is unavailability of detection systems. Wild animal attacks take the lives of many villagers & also destroy their crops, due to unavailability of proper safety devices; these villagers are helpless to their destiny. A proper advance detection system can help them to save their lives and also to provide protection of crops. This research paper is used to protect agricultural land from animals by using microprocessors. Animals are one of the major challenges for all farmers throughout the world. Agriculture provides food requirements for the human beings as well as produces various raw materials for many industries. Due to animal interference in agricultural areas, there will be huge loss of vegetation of farmers. To avoid financial losses it is very important to prevent farms or agricultural land from animals. To overcome this problem, the proposed discloses a RFID (Radio Frequency Identification Device) module & GSM (Global System Mobile) modem for this purpose. Intrusion detection systems use RFID tags to differentiate between the intruders & the authorized person, when the system detects an authorized person then no action is taken by the system. It also provides a system to divert the animals automatically. This paper mainly contributed to repellent the animals to the forest by using three stages: detection of animals, producing irritation noise and spray smoke with the help of fog machines.*

**KEYWORDS: *Animal, Agriculture, Farmer, GSM, RFID, Protection, Intelligent surveillance.***

## INTRODUCTION

India is an agricultural nation; the foundation of the Indian economy is agriculture. Much of the population of India depends on agriculture but farmers are still facing a lot of problems. One of the biggest issues is the dispute between humans and animals, where vast quantities of wealth are wasted and human life is threatened. Currently, disputes between humans and animals are rising. That's why the crop is to be monitored continuously to prevent entry of wild animals or any other unwanted intrusion. Conflicts between human and animal arise due to poaching & encroachment, to satisfy their livelihood humans move into the forest, for claiming land for agriculture & rapid industrialization causes spreading of urban areas & animals enter the nearby villages for water during the summer due to dryness of water in the body [1].

There are several approaches used to solve the disadvantages of these problems generated in previous days. Some of the earlier strategies or tactics were to spray rotten egg odor & pungent odors to move the animals away. In reality, there were also various kinds of fencing methods, such as electrical wire fencing, fishing net fencing to divert the animals. Since various technologies have reached every citizen, the tools they use are acoustic techniques. Sounds are created randomly in these methods to detect any detection of animal motion using motion detection sensors [2].

The objective of this research paper is to provide protection from the attacks of the wild animals and thus minimizing the probable loss to the farmer. To detect intrusion around the field, to capture the image of the intruder and classify them using image processing. Taking suitable action based on the type of the intruder. To send notification to farm owners and forest officials using GSM.

# LITERATURE REVIEW

An electric fence was used in Texas for the first time in 1888. An electric fence was used to protect the farm from wild animals as a barrier. Using an overshot wheel to charge the top two wires of four-wire electricity from an electricity generating system. The big downside to an electric fence is that the electric fence cannot operate if there is any power fault and it often slows down emergency services from reaching the user. This might even result in help reaching users after it is too late. There is a possibility of fire with electric fences when bushes or trees grow close to the fence. Therefore, keeping the electric fence region clean of any such crop is critical. The grounding must also be tested to ensure that the grounding is performed correctly or not. In that case, if it is not handled correctly, animal life will be endangered and it is therefore very risky for human beings. For producers, it would be too costly.

There are many strategies or techniques used by farmer to repel animals and protect crop [1].

1. Agricultural fences
   - Wire fences
   - Plastic fences
   - Electric fences

2. Natural repellents
   - Some farmers like natural protection measures instead of chemical or mechanical protective measures. There are different ways to protect & prevent vegetation from wild animals, including:
   - Smoke: farmers burn the dung of animals in some agricultural areas or any other materials which burn slowly & produce heavy smoke.
   - Natural emulsion of garlic & fish to repel some animal such as deer & rabbits[3].
   - Beehive fencing: Elephants are repelled by the sound of honey bees; the practice of bee farming is beneficial as it developed as an extra source of income.
   - Chili peppers: Chili peppers become hot by mixing the chemical like Capsaicin. It works as best repellent against monkeys, elephants, squirrels, and some other wild animals; farmers who grow chili peppers plants also benefit from an extra source of income.

3. Intrusion detection system

   The Passive Infrared Sensors (PIR) for the observation of human body motion are the tool used in intrusion detection systems. Intrusion detection systems use RFID tags to distinguish between intruders and the authorized individual. The system does not take any action when the system identifies an authorized person. It also offers a scheme to automatically divert the animals. When fewer numbers of sensors are able to feel the motion, the basic operating or working theory is that it senses an animal smaller in height, such as deer & wild boar, and many more, triggers the rotten egg spray device, which helps to keep the pigs away. Similarly if more than half or all of the employed PIR sensors have gone in active mode it is naturally because of a huge animal like elephant, it activate the electronic firecrackers to turn ON, the loud noise which in turn helps to divert the bigger animals.

## DISCUSSION & CONCLUSION

The matter of the degradation of crops by animals has become one of today's biggest social problems. Effective solutions & attention are urgently needed. As its goal is to shorten these problems, this paper has a high social relevance. The proposed microcontroller-based device is found to be more cost-effective, user-friendly, lightweight and easy to use, and can easily be used in order to perform. Several unvaried and monotonous tasks. In this proposed system the process is fully automated & it does not cause any hurt to animals during repellent. The proposed system is used to detect the actual location coordinates of the animals by using GPS & RFID injector.

# REFERENCES

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