A SURVEY ON FOOD PROTECTION IN WAREHOUSE

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Abstract: The Agriculture sector is the backbone of the Indian economy server security. Security no more in terms of sub-resources only although also agricultural products use security also protection at the actual initial stage, like protection from attacks of rodents or insects, in fields or grain stores. Such challenges should also be taken into consideration. Protecting systems that are being used nowadays are not smart adequate to provide within a real-time warning after sensing the query. The integration of traditional methodology with the latest technologies since the Internet of Possessions also Wireless Sensor interface can lead to agricultural modernization. Keeping this scenario in our mind we have designed, tested and analyzed an 'Internet of Things' based device that is proficient in analyzing the sensed information and then transmitting it to the user. Here device can be controlled also monitored from remote sectional also it can be implemented in agricultural fields, grain stores, and cold stores for security object. Here paper is oriented to accentuate the methods to solve such problems like the identification of rodents to crops and delivering real-time warning planted on information study and processing without human intervention. In this tool, communicated sensors and electronic devices are integrated using Python scripts
Raspberry Pi; Wireless Sensor Network (WSN), Sensors;

I. INTRODUCTION

Developing countries, also which are using traditional warehouse facilities for staple food crops, can't preserve the system, leading to a 20- 30% loss of farming products such as rice, corn, wheat, ragi. Available solutions target only insects, pests and grain bug. These rodent impacts abide also accomplices with the debilitating rodent is borne diseases Agricultural products use arms and protection at the extremely initial stage, like protection from attack of rodents or insects, in farmland or grain stores. Automating the maintenance and security process is of huge importance. By the past years, information also communication technologies have continue introduced in agriculture, improving food production also transport. However, the integration of these technologies is not yet

Used for security device. Now the context of Smart Security together Monitoring System for Agriculture, individually residence the challenge of integrating The Internet of Things with electronic security devices and also organization to enhance the efficiency of food preservation in grain stock. Lack of information transference and data analyzing can be solved by the integration of IoT with currently available protection devices inside the order to achieve active food preservation and productivity.

A. Internet of Things
In 1999, Kevin Ashton proposed the term" IoT" to refer to interconnected mechanism. It is a major tech revolution in information also communication technology with updated infrastructure and networks where all the connected devices can identify also impart with any other. Shortly, according to Gartner, about 25b recognize devices are expected to be a sector of this computable network by the year 2020. In such a way is agriculture can be vast areas to integrate IoT with distributed autonomous sensors to monitor the environmental condition of grain stores and to analyze details also pass the information to a remote user.

B. Wireless Sensor Network
Wireless Sensor Network abbreviation. Wireless Sensor Network is a distributed collection about small devices, capable of economic processing also wireless communication. As the implementation of wireless communication technologies in industrial areas is basic due to inaccessibility to a remote location at every time, to transmit the report produced by sensors along for controlling them. So, to achieve interoperability between devices in industrial areas, configuration also implementation of a wireless communication system is done. The structure of the description is as follows. In literature study, includes theoretical contribution also investigation of current security devices and technologies. Also discusses the research and development methodology of the device in which we present our architectonic and design modules, the data transmitted in them. Existing examples of how our device operates and the statistics of efficiency. Also finally, concludes the paper.

II. LITERATURE SURVEY
According to previous research in crop security at the warehouse. It seem that the most of the developing countries, are still using traditional storage facilities to store staple food crops and can't protect them from attacks of rodents or insects, fire, flood, increase or decreases in the threshold value of temperature, moisture, also humidity which further leads to 20-30% loss of agricultural stock stored in various warehouse such as rice, corn, ragi, wheat. Available solutions target only on insects, pests and grain bug. While other study states that 59-10% loss in stored crops on average, in Asia is due to harm caused by rodents. These rodent impacts are also associated along debilitating rodent-borne diseases. As in Asian and Pacific countries death rate due to rodent-borne diseases is higher in comparison with some illnesses that as HIV-AIDS, rat-bite fever, etc.

2.1 Rodent control in India

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India has risen self-sufficient in food production in the 1990s against a deficit situation in the 1950s. Farmers use several techniques for controlling rodents also several improved techniques, particularly rodenticides, have also become available over the last 2 to 3 decades. Some available rodent control options can be grouped into two basic approaches: reductional or lethal and preventive or non-lethal. Tense reduction approach, particularly the use of rodenticides and adornments, which provides an immediate solution to some problems, is often considered the most practical, economical and effective process about combating rodents while preventive or preventive measures involving real, cultural also biological mode, which may produce a

more constant effect, are seldom adopted. Any techniques are used either as part of routine agricultural and post-harvest storage operations/directly against the rodents. Those are directly or indirectly reduce the immigration of rodents into habitat and or reduce the carrying scope of the habitat.

2.2 Rodent Damage in Maize Fields also their Control

Abd El-Aleem Saad Soliman Desoky* Plant Protection Department Faculty of Agriculture, Sohag University, Egypt (IEEE)

Rodents are one of the better significant mammalian orders which have a great number of rodent species by their effect on tense environment. They cause great economic loss to farmers like damaging the growing crops, poultry also animal farm, stored products and food manufactures by damaging the composition and fabric of buildings. Additionally, then attack through almost any object in their frame to obtain food and shelter. Tense present work was directed to identify Rodent's composition and estimates of rodent damage were examined in maize fields also their control over earlier studies. The control of rodents dangles upon the area, neighbouring and available food. This Survey and it also the identification of rats inhabited maize field showing that the field rat. A Nilotic us (Nile grass rat or field rat) was only rodent species prevailing in the area also accountable for maize damage. Tense damage caused a great loss in the spike of a cereal plant or seed-bearing head and grain weight.

2.3 Embedded E-nose application to sense tense food grain storage condition.

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In Indian agriculture, the challenge via providing effective, handling methods especially in unpredictable weather conditions also safe viable storage. This can be done by using the appropriate system and sensors to hold up organization and storage parameters at a predefined level by monitoring of the storage space.

This journal presents the application of the e-nose structure on with a smart embedded sensor system to learn the deterioration of food grains under different stress a like temperature, humidity, ant., etc, and room environmental conditions. Tense food grain status is artificially generated and the effects are studied with the Fox 2000 E-nose system. To analyze the data of millet, rice, wheat, jawar under various stress conditions, we performed distinct analysis viz, Discriminate Factorial Analysis also Principal Component Analysis on the acquired E-nose data and results obtained are also presented.

2.4 Damage Caused by Birds also Rodent in Field Crops and Their Control.

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Damage caused by birds also rodents now California, agricultural production is a cornerstone of the state economic system, Agricultural pests, such as rodents also birds, may cause notable damages to crops also reduce growers aptitude into provide agricultural commodities towards the market. Tense total approximated revenue lost annually in the ten counties due to rodents also birds damage to 22 selected crops in 1999, ranged from $168 million-$504 million. The multiplier things of this type of damage may be adverse the agricultural sector typically provides inputs towards almost all other sectors of the economy ex., including manufacture, retail trade also accommodation, also food service. Rodent control strategies must consider ecology as well as economics. Tense distinguish in species composition of rodents depending on also preferred food habitat type. Population productive must also be taken into account, including extrinsic density-dependent and intrinsic density-independent factors high population density of rodents that occurred in spring was increased venture. However, the lowest density at tense time of the winter season.

2.5 An Internet of Things based Warehouse Intrusion Detection also Grain Tracking Model for Food Reserve Agency.

Jackson Phiri, Sipiwe Chihana, Douglas Kunda

Zambia's agriculture still backward, faces many challenges that range from spoilage, infestations, marketing also theft at spillage, site also storage among others. Tense methods used by the Food Reserve Agency in their filed process are long standard as there are no systems in areas. In progression to help curb these problems, this paper proposed is developed novel method that can be using to sensation real-time warehouse instruction also grain reporting within the Food Reserve Agency circulation. The Internet Of Things based prototype model made uses of the APC220 transceiver, GSM, GPRS, RFID, PIR also cloud storage to web theft of grain at storage area, the system used motion-sensing over the uses of PIR sensors, the GSM/GPRS technologies also wireless radio connection models such that when anyone comes in the range of PIR sensors, then the sensors sends a logic signal to the microcontroller, Lastly the RFID combined with Arduino and GSM microcontroller responsible for grain reporting. From tense results obtained now the experiment guidance, it is believed that once the technologies are adopted, stealing will be reduce also grain supervision in the Food Reserve Agency Satellite depots

dotted around tense country will improve. The extreme objectives therefore in this paper are to design a warehouse detection, instruction also grain tracking model based on the Internet of Things, mobile communication also cloud storage for securing grain, to develop methods placed on the prototype for accessing grain states information in real-time.

III. CONCLUSION

IoT is widely used in collecting information and connecting devices. The system is designed for classifying of rodents in grain stores. After analyzing also collecting the data, an algorithm is designed to provide accuracy in informing the user and simulation of the repeller. All the results are calculated by taking any readings. Tense testing is done in an area of 10 square meters with a device placed at the corner. Once PIR sensor recognized heat it starts webcam and URD sensor, along with it, the device sends random no. of notifications based upon timestamp to a user. For future enhancement, the device will inherit a grid of sensor panels existing PIR sensors and URD sensors. The device can incorporate pattern perception techniques for machine learning and to recognize objects also categorize them into rodents, human beings, and mammals, also sensor fusion can be done to increase the operative of device. Improving these perspectives of the device, Is can be used in distinguish areas. This project can undergo further research to improve the user device and its value areas. We have opted to implement this system as a security solution in the farming sector i.e. grain stores, cold stores, and farms. The results of the work point to the following directions of research that is likely to be used for further improvement.

- It may be valuable to extend the security system to prevent rodents in grain stores.
- It can be further improved for the categorization and identification in mammals, human beings also rodents.
- The Device can be enabled to solicit more information about surroundings also the presence of threats so the use of machine learning is achieved.
- The location of a device in tense area can also be change planted upon the area of grains for more active results.

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