

Smart Farming And Cattle Disease Prevention

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Abstract- The cattle industry is an integral part of the world economy. Additional benefits can be realized from this class of technology, such as the ability to identify the presence of disease early and thereby prevent its spread. Agriculture is the major source of income in country side areas. Animals like cow, buffalo, sheep, goat etc. play an important role in life of rural. They are used as a source of income.

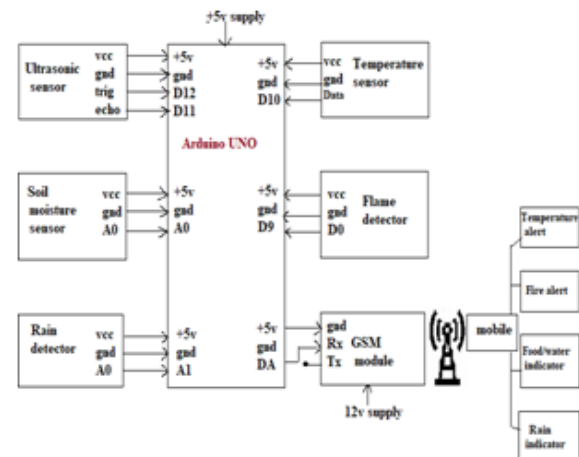
Keywords- Cattle, Farmer, Disease.

I. INTRODUCTION

The respect for cattle is widespread yet not global. Because of the multiple advantages from cattle, there are differing views about cattle in various religions. Cow is the nickname for cattle. It plays a major role in farming of our country. Additionally, cattle farming are a noteworthy contribution to the low-wage farmers. Cattle are a direct source for their earnings and livelihood particularly in nations like India. It is essential for various components. Few of them are recorded as follows, Firstly, because of our regularly developing interest on Milk and its products and also one of the real significance is for its rich compost got from the cattle excreta which shows a superior impact in natural cultivating. In spite of providing many benefits, we are unable to provide them enough security. And if we, Indians play out our role towards the cows, our countries cattle would be pride of India and to the world. As a part of that, we hereby want to implement our idea

which provides a superior security for cattle. Our main goal is to provide security for cattle. The Security alarms are designed to detect the violation and prohibited entry into an area or a building. These alarms are used in business, housing, factories, and defence military stuff for security and protection against burglaries and property destruction, as well as personal protection against burglars. Prisons also use security systems for the control of convicts. Likewise, many farmers are also going under few circumstances where they are unable to provide 24 x 7 security i.e. all-time security for their cattle as well as their cattle's food and shelter. The overall objective of proposed work is to enable the user (farmer) to manage alien entry to his farm or cattle field. Thus, the design is proposed to solve the above discussed objective.

II. DESIGN



III. PARTS OF UNIT

1. Arduino UNO

Arduino board is interfaced with various sensors. Arduino collect the information from interface module and sensors, sends action commands to GSM.

2. Ultrasonicsensors

Ultrasonic sensors emit ultrasonic pulses that travel in a cone-shaped beam by using a vibrating device known as a transducer, generating the ultrasonic wave. The frequency of vibration of the transducer determines the range of an ultrasonic sensor. The sound waves transmit for progressively shorter distances along with the frequency increases.

3. SoilMoisture

The soil moisture sensor uses capacitance to measure dielectrical permittivity of the surrounding medium. In soil, dielectrical permittivity is a function of the water content. The sensor average the water content over the entire length of the sensor.

4. Temperature sensor

A temperature sensor is a device, usually an RTD (resistance temperature detector) or a thermocouple, that collects the data about temperature from a particular source

and converts the data into understandable form for a device or an observer.

5. Flame Detector

Flame detection is a sensor design to the presence of flame or fire, allowing flame detection.

6. Mobile Communication for Modem (GSM)

GSM is a mobile communication for modem; it is stands for global system for mobile communication (GSM) A GSM digitizes and reduces the data, then sends it down through channel with two different streams of client data. Each its own particular timeslot.

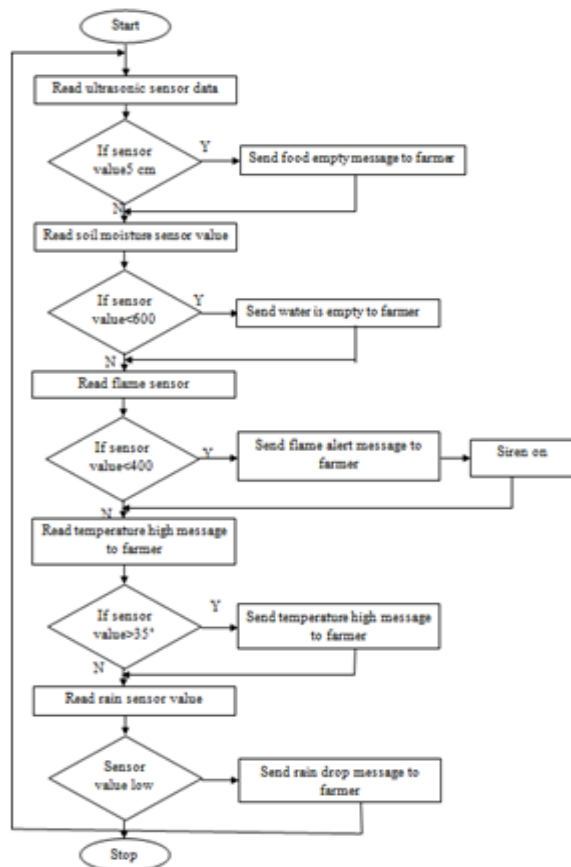
7. Rain Detection sensor

The rain sensor module is an easy tool for rain detection. It can be used as a switch when raindrop falls though the raining board and also for measuring rainfall intensity.

transmitting the signal through the transmitter, if the transmitter signal is received by the receiver which is reflected from the any object (food) above greater that distance of 5cm, then the message “food empty” if this message was not received the cattle is not consuming the proper amount of food i.e. the cattle is facing the problem while consuming food therefore this is the symptoms of “brucellosis disease”. Next step is soil moisture sensor is used to check the water level is thewater

Container if the moisture values greater than 600 then former receive the message “water empty”. If this message was not received the cattle is facing problem while consuming water if is the symptoms “brucellosis and foot and mouth disease”. Next system read the flame detector sensor if the value is <400, the siren will on and Along with send the alert message to former. Next step is read the temperature sensor senses the temperature condition if temperature is >35°C system send the message to the former that ”Temperature high” this is symptoms of red water disease. Rain detector was read the sensor value if sensor value==low, system send the message to the former that it’s rain. This process is continuing loops.

IV. WORKING



Initially the flow chart start from the ultrasonic sensor is reads the food level the food container by

V. TESTING AND RESLUTS

In this Testing, ultrasonic sensor senses the food container, here the sensing value is value 178cm, and it sends a message to the farmer food is empty. Here soil moisture sensor sensing value is 1019, so it sends a message that water empty.

Flame detector sensor identifies the fire if it exist, then it sends a message to farmer that no fire is detected. So it sends a message that no flame. Temperature sensor senses the temperature and humidity, if the temperature is greater than 35, it sends the message but here the temperature is 30 so it ignores that. By using rain detector sensor senses the raining, if there is a raining then it sends a message to farmer that itsrain.

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1008
Current humidity = 15.00%  temperature = 30.00C
no flame
Distance from the object = 44 cm
Food Empty
507
1009
Current humidity = 15.00%  temperature = 30.00C
no flame
Distance from the object = 2 cm
438
1009
Current humidity = 15.00%  temperature = 30.00C
no flame
Distance from the object = 3 cm
444
1010
Current humidity = 15.00%  temperature = 30.00C
no flame
Distance from the object = 3 cm
455
1010
Current humidity = 15.00%  temperature = 30.00C
no flame
Distance from the object = 3 cm
438
1008
Current humidity = 14.00%  temperature = 30.00C
no flame
Distance from the object = 4 cm
498
1008
Current humidity = 14.00%  temperature = 30.00C
no flame
Distance from the object = 3 cm
468
1007

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VI. ADVANTAGES AND APPLICATIONS

ADVANTAGES

- It is cost effective method.
- Increase overall income of the farmer and raise their standard of living.

APPLICATIONS

- Poultry farms
- Cow farms
- Sheep and Goat farms
- Sericulture farms
- Agriculture

VII. CONCLUSION

In this paper, the security is provided to the cattle farm it can be detected irrespective to the presence of a person. In India 70% of its population earns its livelihood from agriculture. Our Smart sensing system provides precise results

This can be used for maintenance of cattle farms and providing them security in a very low cost and in an efficient way. Each time an intrusion occurs it can be detected irrespective of a person, Many Systems are either costly or less accurate but this proposed system for cattle field security

can give a cost effective and fool proof security. Therefore, the work done in this paper concludes that this can be an efficient security providing system that uses an ultrasonic sensor and a GSM module as the major components. Also, depending on the aim behind this security alarm system, it is also concluded that this security alarm can be implemented for many different fields as well as to defend different expensive, unique and rare things or species.

VIII. FUTURE SCOPE

This project can be further extended by using the arduino and also implementing by the IoT. Here we can implement this only on single cattle. In future we can implement on many cattle by using different techniques.

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