

BHARTI VIDYAPEETH COLLEGE OF ENGINEERING

SMART LIVESTOCK USING IOT

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ABSTRACT

Internet of things (IoT) is recently become the effective digital technology used in **Smart Livestock** to increase productivity, efficient and sustainable farm operation. The main aim of this Project is to knowledge of IoT and to use its features as interrelated computing devices such as, interrelation between mechanical and digital machines. Animal husbandry and livestock are unsustainable as well as tedious operations when it comes to managing livestock and feed, the goal for every farmer is to have efficient and productive system as possible. **Smart Livestock** provides one of the best leverage new technologies that uses the Internet of Things (IoT). Farmers can track the amount of food that cow consumed and amount of steps to be taken in a day. With the help of the data base gained from cow's activity, farmer can improve the diets of cow to increase lactation. Integrating IoT technology can help monitor animal's individual health, movement, location and much more. This can result into increase in farmer's productivity and revenue. Smart livestock farming aim is to achieve farm operations based on the effective use of digital technologies.

INTRODUCTION

India is an agricultural country. Livestock farming is plays important role in agriculture. Smart livestock farming aim is to achieve farm operations based on the effective use of digital technologies. **Livestock** is commonly defined as domesticated animals raised in an agricultural setting to produce labor and commodities such as meat, eggs, milk, fur, leather and wool. We are implementing **Recording system** by reference of RFID Technology Tracks & Records Data about Animals, Article. Farmers can track the amount of cows and amount of steps to be taken in a day. With the help of the data base gained from cow's activity, farmer can improve the productivity of cow to increase lactation[1]. **Feeding and Water supply system** by reference of Dairy Farms: Mechanization, Automation, and Robotization, to supply the feed at particular time and some delay to supply water at particular level[2]. **Cleaning system** by reference of Automated Customized Cow Shed Cleaning, we are proposing to automate the process of cleaning the surface of shed and also cows body. The fundamental reason as to w the concept has been chosen is required to maintain the hygiene and the cleanliness of the cow shed[3].

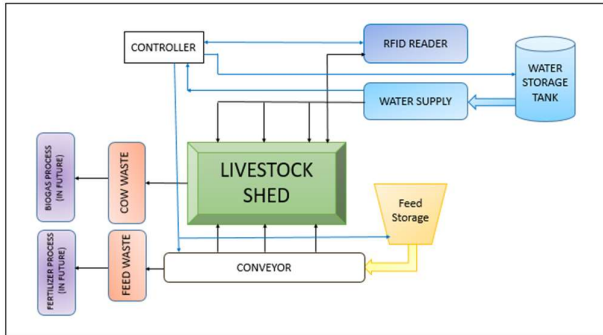
WHY SMART LIVESTOCK?

The main idea of doing this project was to eradicate or at least to minimize the following problems faced by a cattle man –

- High animal losses through infectious diseases
- Production losses through poor management and internal parasites.
- Poor hygiene
- A low level of technology
- Water wastage etc.

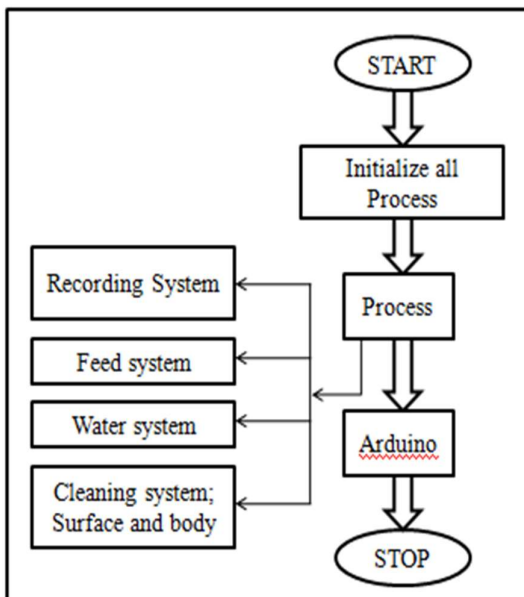
METHODOLOGY:

Block Diagram:

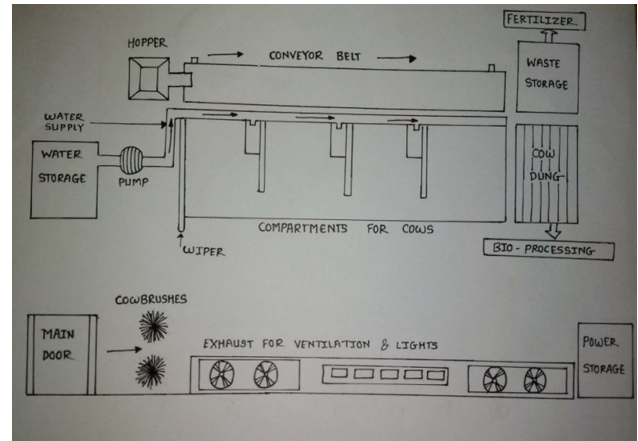


Livestock shed is semi-automatic and is control by Arduino controller. Power supply (12 vDC) is given to the all Motors and 5vDC is given to the Arduino controller. Feed is provide to each compartment time to time through conveyor belt and waste feed is move to the waste feed tank. After some delay, Water supply also provide to each compartment at particular level. The surface cleaning of the shed (Cow dung) will be clean via wiper and it move out to the cow waste tank.

FLOW CHART :



IMPLEMENTATION:



We are implementing some system in the livestock farm such as-

- Feeding system
- Cleaning system
- Ventilation and Lighting System
- Water Supply System
- Data Recording System
- Cow Cleaning System

In the shed cattle enter through the door, which is identify by the RFID Reader. RFID place on the main door and RFID chip is attach to the each cow ear. After detecting the cattle the data (date, time, cow number etc.) is send to the owner. IR sensor detect the cattle after that cow brushes will be rotate for cattle body cleaning. Feed is provide to each compartment time to time through conveyor belt and waste feed is move to the waste feed tank. Waste feed material will be use for fertilizer process. After some delay, Water supply also provide to each compartment at particular level. The surface cleaning of the shed (Cow dung) will be clean via wiper and it move out to the cow waste tank. Cow dung will be use for biogas process.

APPLICATION:

- This idea can be implemented on a large scale to meet increase in farmer's productivity and revenue.
- This idea implemented on a minimize high animal losses through infectious diseases,

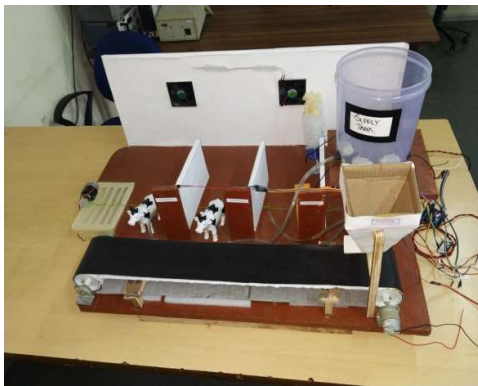
production losses through poor management.

- It can be used in management along agricultural field.

RESULTS:

The acceptable results of our projects are:

- To detect the identity of cows.
- Feed and Water provided in the shed to cows on time to time.
- To increase their health and reduce the labor cost.
- Increase the productivity of farm.



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